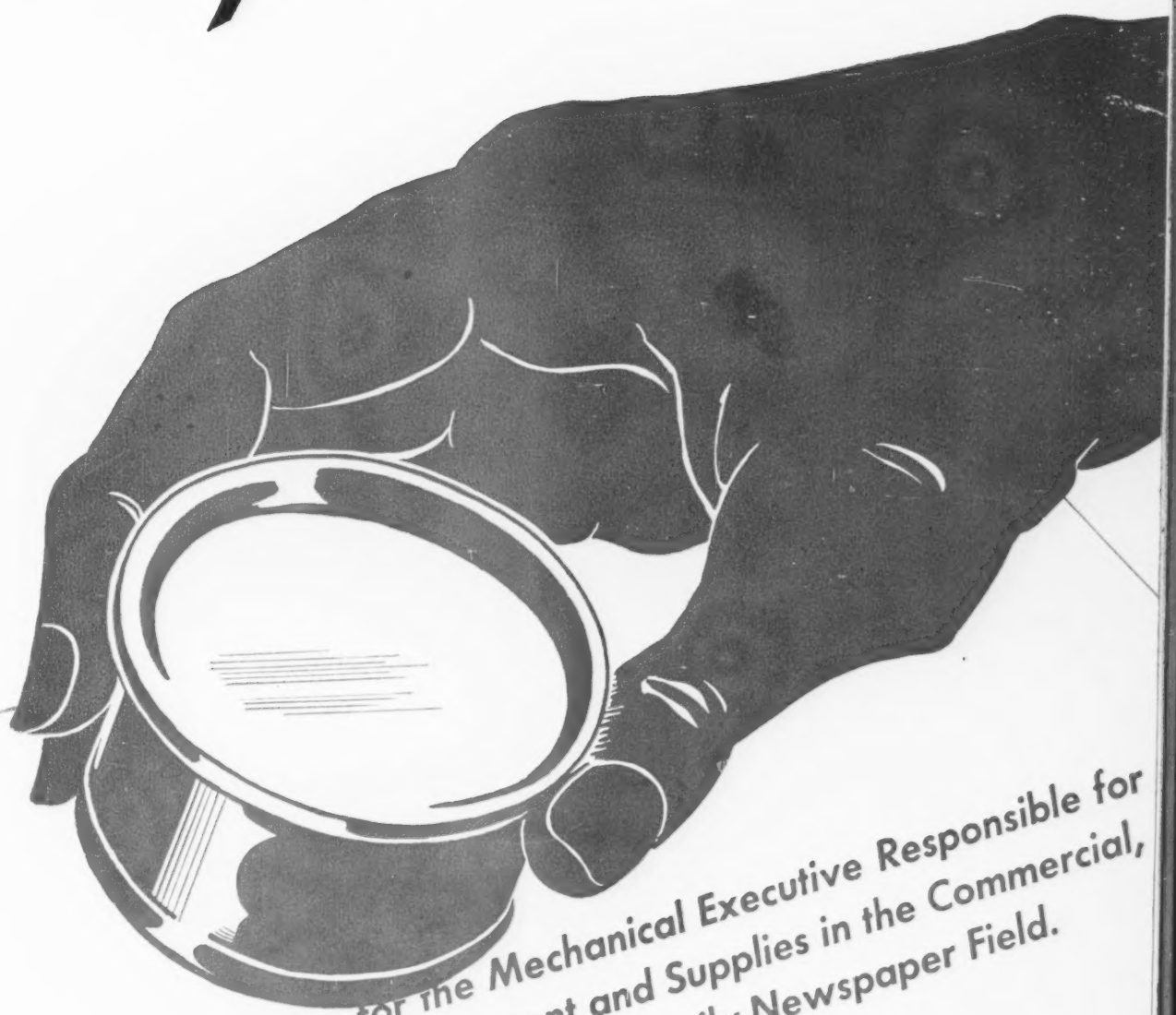
PRINTING EQUIPMENT *Engineer*



A Technical Publication for the Mechanical Executive Responsible for Printing Production, Equipment and Supplies in the Commercial, Magazine, Private Plant and Daily Newspaper Field.

JANUARY, 1943

an undying Imprint

No other personality in all history has left its imprint more indelibly upon community growth and National spirit than the *printer.* Courageous and optimistic, he pioneered for education and enlightenment and all the advantages which they bring. He spurred civic pride, fought for law and order, opened a fertile field for initiative and earning power. He gave new impetus to business effort. He left cherished traditions. In many instances, America can thank the printing craft for her wholesome ways of life. ★ And like the Minute Men of early days, the printers of today must be alive to the message inscribed upon the printed page—the reason for it, its purpose and desired influence. Only by such genuine interest can they live up to ideals and further the highest efficiency in our war effort. Whatever the National objective, the printer can simplify the means..

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Production Standards and Economic Cost Values for Printers

FOR the printer who is seeking economic values or cost price per M units for all operations in the commercial printing plant and pamphlet bindery, Fred W. Hoch's revised edition of *Production Standards and Economic Cost Values for Printers* may be used to good advantage.

The book contains production standards in hours and decimal hours and a dollar and cent value for each operation in the industry. The economic hour costs used throughout the book are shown on page 62. These may be used as a guidance in establishing the cost value of the work produced in any plant regardless of its hour cost rates, by adding or subtracting the percentage ratio of the plant's hour costs to the economic hour costs shown.

The index shows 53 separate and distinct operational classifications beginning with copyfitting and covering composition, presswork, binding, and shipping operations.

The pressroom equipment includes all press sizes from the 10 x 15 hand-fed through the perfecting cylinders, 2-color automatics, and 2-color cylinder presses up to sizes 46¼ x 69½.

A section devoted to Ready Reference Helps for the Estimator shows examples of various classifications of machine composition, as well as a price per line of linotype and monotype based on trade typesetting methods used throughout the country.

A copyfitting section includes a method of casting off copy for all sizes and families of type faces that have been cast or may be cast in the future. Printed on 150 basis offset stock to withstand hard usage.

Production Standards and Economic Cost Values for Printers—By Fred W. Hoch. 64 pages, size 6 x 9. Published by Fred W. Hoch Associates, Inc. May be ordered through *Printing Equipment Engineer*, price $5 per copy, remittance with order.

Report is "Dressed Up"

AN interesting example of the recent trend to dress up and humanize cold statistical annual reports by manufacturing companies is that of Mergenthaler Linotype Company under the title *Linotype Reports—1942*. The report of President Joseph T. Mackey which was presented to the shareholders by the Board of Directors, contains besides the usual Financial Statements, a discussion about the company's activities during wartime. President Mackey recommends that his Annual Report to Linotype Employees which was published separately be included as a part of the Annual Report to Linotype Shareholders.

The report consists of 20 pages and cover, 8½ in. by 11 in. size, and is illustrated with a view showing the recent award to the company of the Army-Navy "E" flag, a view of the company's new plant addition and several pertinent personnel illustrations.

War Product Research Report

PROBABLY one of the most important publications to have been issued recently is the *Report on War Product Research*, by Products Engineer M. E. Powers. The Report was prepared for and with the collaboration of the War Conversion Committee of the Graphic Arts Association of Illinois, Inc. It was published especially for the membership of the Association with a view of informing them as to what war products can be manufactured in their plants by utilizing present equipment, what products can be made by setting up a separate operation with separate equipment, a supplementary listing of operations and products that might become a part of the printers' war effort, sales suggestions for printing during the period of changeover to the making of new products, a discussion on plant concentration based upon the English plan.

Justification for preparing the report will be found in one fact alone. In the present complicated state of things, many printers cannot be expected to possess the ability to recognize all of the elements which will affect their business, and unless through the *Report on War Product Research*, or something similar, they are able to circumvent them, will eventually put them out of business.

In line with repeated statements made some time ago by Deputy Chief E. W. Palmer of the Printing and Publishing Division of WPB, that "the conversion potential of the printing plant is extremely low," a statement in the introduction to the report is as follows: "Two choices are apparently open to them (the printing plants—Ed.)—to enter war work with their full resources and effort and abandon their printing activities for the time being, or to attempt to continue in the printing industry on a very restricted printing volume and in a very competitive market." It is pointed out in the report that printing equipment can be applied only in a limited way to the making of war material of one kind or another. Also, the difficulties the printer will encounter when he attempts to convert his plant to the production of war material are pointed out, as well as the difficulties to be encountered if he sets up a separate organization to manufacture war products.

Part 2 consists of a report on the study made of suggestions submitted by association members to the committee for investigation. The suggestions have been classified into three groups, A, B and C, according to their apparent possibilities as part of the war effort on the part of a printer. Of the total 38 suggestions that have been studied, 8 have been rejected, 24 are being further investigated, and 6 are offered to the printers as having definite war production merit.

Class A consists of suggestions that have been rejected as not practical for printing plant production because of technical objections, need of special equipment or handicap in competitive production. Class B consists of 24 suggestions which, in the opinion of Mr. Powers, are worthy of further consideration and study. All of them have possibilities for the printer and are lacking in only some minor particular. Class C consists of 6 suggestions related to the war products that have been selected as possible for production in the plant of the printer after careful study.

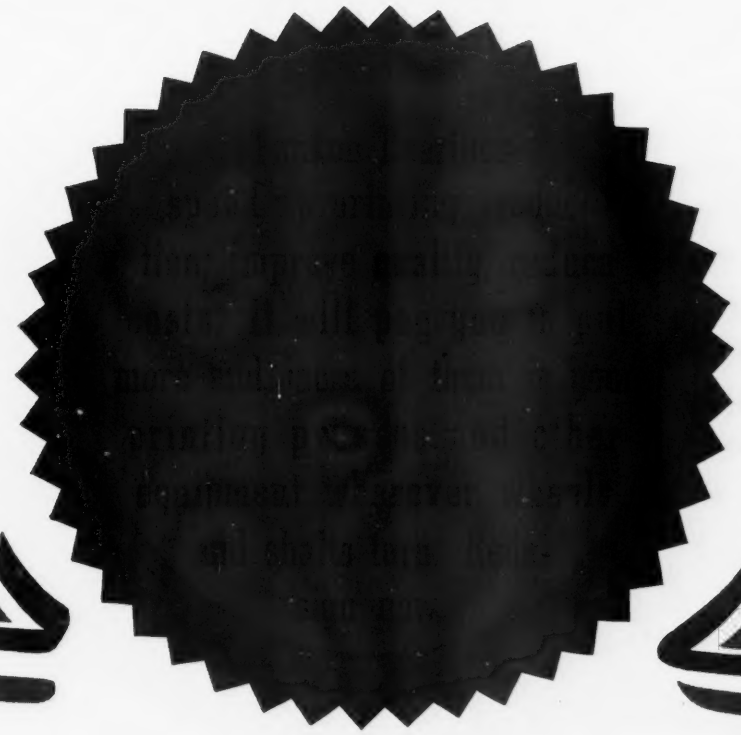
In Part 5, the plan for continued research is discussed. The committee reports: "Recognizing the necessity of entering new fields of manufacture, the problem becomes one of selecting the industry into which the printer may enter with low initial investment; one that is not too involved in technique and that has not only current possibilities but has promise of development in the future. Of the several industries that might fit these specifications, we have directed our attention to three—plastics, plywood and wood-working."

Part 7 consists of 16 conclusions arrived at as the result of the investigation. It is not a rosy picture when compared to the normal position of the printing plant in normal times. Everyone who reads the report, however, will be impressed with the thorough analysis of a subject which just about every printer is not competent to make. The *Report on War Product Research* is a shining example of what can be accomplished by research.

A limited number of copies of the Report are available. These may be obtained while the supply lasts from S. F. Beatty, Secretary and General Manager, Graphic Arts Association of Illinois, Inc., 105 West Monroe St., Chicago, Ill.

CORRECTION

The name of E. W. Blatchford Company, manufacturers of Honeycomb Base, was omitted inadvertently from the Pressroom Section of the Advertisers' Departmentalized Index, page 2 of *Printing Equipment Engineer's* 9th Annual Reference Issue. Also, on page 142, in the Trade Name Index, the E. W. Blatchford Company, 63 Park Row, New York, N. Y., should have been listed as manufacturers of Honeycomb Base for mounting plates in the form or on the press bed.



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- **STANDARD BOOK ON ESTIMATING for PRINTERS —By Fred W. Hoch.** Revised 1941 edition. This book is a primer for students and a reference for printers and estimators. Every printing plant should have a copy. Author explains all operations in commercial printing plant and shows production time allowance for each in hours and decimal hours. Size, 6 in. by 9¼ in., 268 pages, $3.75 per copy, cash with order.
- **PRINTING INKS** — Their Chemistry and Technology **—By Carleton Ellis.** Bound in cloth, 6 in. by 9½ in., 560 pages, well illustrated. For printing executives, pressmen, photo-engravers, platemakers, ink manufacturers, chemists, paper-makers. Author stays close to printing plant. The solving of new production problems brought about by technological improvements, both in equipment and inks, created the urgent need for this book. Price $7, cash with order.
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- **PHOTOGRAVURE—By H. Mills Cartwright.** Covers all of photogravure's basic principles in concise and readable language. Rotogravure receives minor discussion but this is generally considered best textbook on photogravure process. Contains 202 pages, 34 illustrations, maroon cloth, size 6¼ in. by 9¼ in., $3.50 per copy, cash with order.
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- **PRESSROOM PROBLEMS AND ANSWERS — By Fred W. Hoch.** Might be considered a miniature encyclopedia since it contains answers to 334 pressroom problems which have been answered by Mr. Hoch. Written in language of journeyman pressman. Pressmen, production men, paper and ink manufacturers, electrotypers and photo-engravers will find this book of high utility when pressroom problems arise in which tendency is to lay blame on furnished materials used in pressroom production. Size, 6 in. by 9½ in., 258 pages, gold stamped blue cloth. Price, $3 per copy, cash with order.
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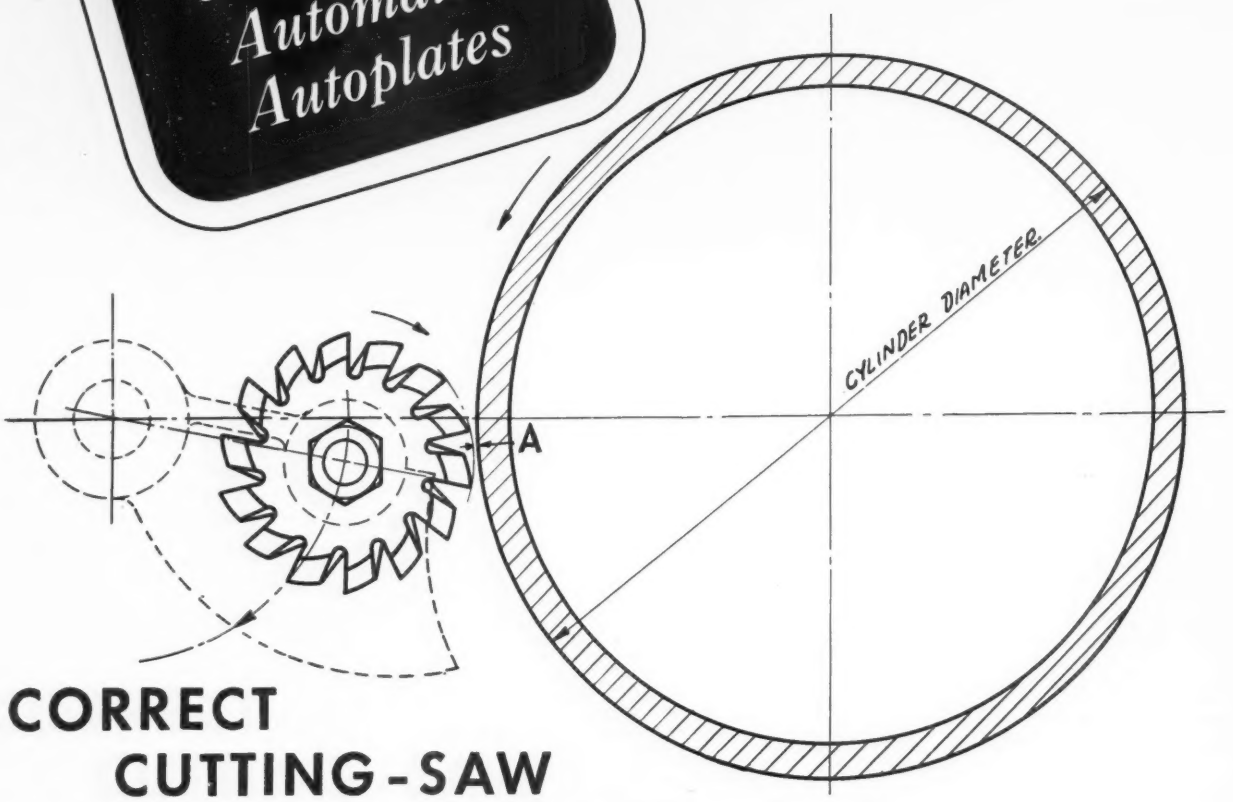
Maintenance Hint . . . for Junior and Automatic Autoplates



CORRECT CUTTING-SAW SETTING

After each re-sharpening, it is important to RESET the cutting saw accurately. This will materially lengthen life of the saws—and avoid cutting a groove in the cylinder.

Be sure to set saw *while cylinder is COLD.* The dimension "A", on the diagram, is the distance between the saw and the cylinder. On *Junior* Autoplates this distance should be .015″. On *Automatic* Autoplates, it should be .018″.

If you need assistance on maintaining *any* Wood equipment at peak performance for the duration . . . please write the Engineering Dept., at Plainfield, N. J., Wood Newspaper Machinery Corporation. New York Office: 501 Fifth Avenue.

Wood NEWSPAPER MACHINERY

wpb news

OF the greatest importance to printing plant executives this month are the various Limitation Orders issued by the War Production Board. The most important are the ones affecting the manufacture, sale and purchase of printing equipment (capital machines), operating supplies (small pieces of equipment not normally considered capital items), and replacement parts; and the various paper orders affecting production of books, commercial printing, magazines and newspapers.

For the convenience of the reader, we are publishing a brief reference index of the subject matter of the orders, voluntary conservation and recent news items. These are as follows:

- *Biggest printing Job of Kind in Country's History*
- *Book Paper Use Restricted by Order L-245*
- *Bronze Powder Released to Printing Industry by Order M-9-c-3 amended*
- *Copper Conservation Order M-9-c Affects Copperplate Engraving, Photo-engravers, Electrotypers and Rotogravure Printers*
- *Commercial Printing Paper Use Restricted by Order L-241*
- *Copper and Zinc Economy, Suggestions for, in New York Area*
- *Fluorescent Light Reflectors, Use of Metal In, Banned by Order L-78*
- *Magazine Paper Consumption Restricted by Order L-244*
- *Motors, New Electric, Manufacture and Purchase of, Governed by Order L-221*
- *Newsprint Use Limited by Order L-240*
- *New Chief for Book Section*
- *Pencil Sharpeners and File Fasteners Affected by Order L-73 amended*
- *Photographic Film, Production of, Goverened by Order L-233*
- *Printing Machinery, Operating Supplies and Replacement Parts Affected by Order L-226*
- *Spare Parts for General Industrial Equipment Not Affected by Order L-123*
- *UTA Suggestions for Ordering Stitching Wire*
- *Voluntary Stitching Wire Conservation*
- *Water Heater Manufacture Restricted by Orders L-185 and L-199*
- *Zinc Conservation Plan Approved by WPB*

Printing Machinery,

operating supplies and replacement parts now under control of sweeping WPB Limitation Order L-226 — Deliveries of machinery less than five years old must be approved — Replacement parts exchange mandatory

ON January 4, WPB issued the long expected machinery order. It has been designated Limitation Order L-226, and according to announcement replaces Limitation Order L-83 projected last spring. Order L-226 governs the production, sale, disposition and purchase of printing and publishing machinery, parts and supplies, including the disposal of machinery less than five years old. The entire Graphic Arts Industries composed of letterpress, lithographic and gravure printers is affected, including the manufacturer, distributor of machinery and parts, and the owner of existing equipment. It appears that the manufacture of graphic arts machinery is now completely under WPB control. On and after January 30, 1943, WPB approval will be required before the delivery of machinery less than five years old can be made.

The manufacture of operating supplies and replacement parts takes precedence over all other orders. This means that a manufacturer may treat orders for replacement parts as if all such orders were rated AA-1. This protects the AAA rating, but at the same time permits the orderly scheduling of the production of the manufacturer's quota of replacement parts.

The various kinds of machinery as well as operating supplies covered by the order are enumerated in Schedules A and B appended to the order. Apparently, Schedules A and B will be subject to revision from time to time by way of machinery and operating supply additions, inasmuch as it is stated in the order that definitions of "graphic arts machinery" and "operating supplies" used in the graphic arts industries are not limited to the kinds listed in Schedules A and B.

Not included in Order L-226 in the definition of printed matter in paragraphs (2), (3), (4) and (10) is any office machinery as listed in General Limitation Order L-54-c as Amended, operating supplies and replacement parts for the same, and the material produced by the same.

Manufacture of Operating Supplies Limited to 72% of 1941

The order provides that the manufacture of operating supplies is limited to 72% of the dollar value produced in 1941 (base period), provided the manufacturer's inventory does not exceed four months. If it does, he is limited to 24% of the base period.

Manufacture of Replacement Parts Limited to 120% of 1941

It is provided in the order that the manufacture of replacement parts is limited to 120% of the dollar value produced in 1941 (base period), provided the manufacturer does not have more than four months' inventory of such parts. If his inventory exceeds four months, production of replacement parts is limited to 72% of the base period.

Disposal of Replaced Machine Parts

Printing plant executives should make special note of the provisions for disposal of replaced machine parts. No manufacturer or distributor shall sell or deliver any operating supply or replacement part to a customer who fails within 30 days after receipt of a supply or part, to (i) deliver to the manufacturer or distributor a used part of similar kind or size for each new replacement part or operating supply delivered to the consumer, or (ii) to certify to the manufacturer or distributor that he has disposed through scrap channels of a used part of similar kind and size for each new replacement part or operating supply delivered to the consumer.

A manufacturer may not install replacement parts in the consumer's machine unless the producer shall receive from the consumer at the time of such installation a used part of similar metal content, size and kind for each used re-

placement part or operating supply delivered to the consumer.

Machine Orders Must Be Approved by WPB

Any person seeking an approved order for machinery must file a form containing all information requested by the form, and in addition must answer the following questions:

(1) Is the machinery an expansion of existing facilities or a replacement, and if the latter, what disposition will be made of the existing machinery?

(2) Does the applicant have in use any machinery similar to that for which application is made?

(3) How does the applicant now accomplish the work for which is required the machinery applied for?

It is understood on reliable authority that application for an approved order may be made on either Form PD-556 or PD-1-a until January 30, after which date the applicant must file his request on Form PD-556 only.

How L-226 Is Divided

Limitation Order L-226 is divided into 11 sections. In addition, two schedules are appended. Schedule A designates by name the various kinds of graphic arts machinery affected by the order. Schedule B appended to the order enumerates by name the kinds of operating supplies affected by the order. Both Schedules A and B cover machinery and operating supplies used by the letterpress, lithographic and gravure printing trades.

Section (a) is devoted to protection of manufacturers' production schedules of operating supplies and replacement parts for consumption by the printing industry, under the terms stipulated in paragraphs (d) and (e) of the order. On and after January 1, 1943, manufacturers may schedule production of operating supplies and replacement parts as if the orders bear a rating of AA-1.

Section (b) is devoted to 10 definitions of the expressions used in the order.

Section (c) is divided into three parts. Part (1) contains restrictions for acceptance of orders for production and delivery of graphic arts machinery. Part (2) governs suction sales, sales pursuant to court order and similar transactions of used graphic arts machinery. Part (3) enumerates 11 exempted transactions for the delivery or acquisition of graphic arts machinery which are permitted by Limitation Order 226.

Section (d) contains restrictions on the production of operating supplies used in the graphic arts processes.

Section (e) contains restrictions on the production of replacement parts used in the graphic arts industries.

Section (f) contains restrictions on sales of operating supplies and replacement parts to consumers, and the disposal of the parts which have been replaced.

Section (g) contains the requirements for obtaining an approved WPB order for graphic arts machinery contained in List A of the order.

Section (h) contains the stipulations for keeping records concerning inventories, production and sales by all persons affected by the order.

Section (i) stipulates that all persons affected by the order shall file with WPB such reports and questionnaires as the Board shall request.

Section (j) relates to punishment for violations of the order.

Section (k) provides for appeals from provisions of the order.

Section (l) directs addressing of all communications concerning this order to WPB, Printing and Publishing Division.

Text of Order L-226

Below appears the text of Printing and Publishing Machinery, Parts and Supplies Limitation Order L-226:

Part 3133—Printing and Publishing Machinery, Parts and Supplies

(Limitation Order L-226)

THE fulfillment of requirements for the defense of the United States having created a shortage in the supply of aluminum, chromium, copper, nickel, iron, steel, manpower, transportation, and electrical energy required for the production of graphic arts machinery, operating supplies, and replacement parts therefor for defense, for private account and for export, the following order is deemed necessary and appropriate in the public interest and to promote the national defense:

§ 3133.1 *Limitation Order L-226*—(a) *Protection of production schedules.* This order and all transactions affected thereby are subject to all applicable provisions of the priorities regulations of the War Production Board as amended from time to time, except that notwithstanding Priorities Regulation 1 producers of operating supplies and replacement parts, to the extent provided for in paragraphs (d) and (e) of this order, may on and after January 1, 1943, schedule their production of such operating supplies and replacement parts as if the orders therefor bore a rating of AA-1.

(b) *Definitions.* For the purposes of this order:

(1) "Person" means any individual, partnership, association, business trust, corporation, governmental corporation or agency, or any organized group of persons, whether incorporated or not.

(2) "Graphic arts machinery" means any piece of new, used or reconditioned machinery or equipment designed for use in the production of printed matter, including but not limited to the kinds listed on Schedule A.

(3) "Operating supplies" means small pieces of equipment not normally considered capital items peculiar to and used exclusively in the graphic arts industry including but not limited to the kinds listed on Schedule B.

(4) "Replacement parts" means parts used for the repair or maintenance of the machinery listed in paragraph (b) (2) hereof.

(5) "Producer" means any person engaged in whole or in part in the manufacture of new graphic arts machinery, operating supplies, or replacement parts as defined in paragraphs (b) (2), (3) and (4) above.

(6) "Inventory" means any stock of operating supplies or replacement parts as defined in paragraphs (b) (3) and (4), on hand, or consignment, or held for the account of the owner thereof in any other name, manner or place.

(7) "Order" means any commitment or other arrangement for the production or delivery of graphic arts machinery.

(8) "Distributor" means any person regularly engaged in the business of buying or otherwise acquiring new, used, or reconditioned graphic arts machinery, operating supplies, or replacement parts for resale or lease.

(9) "Approved order" means any order for graphic arts machinery approved by the War Production Board as provided in paragraph (g) hereof.

(10) "Printed matter" shall include any paper (or any paperlike substance), wood, fabric, metal or other material upon which there has been printed, impressed or otherwise transferred any ink, color, pigment, mark, character or delineation by the letter press, lithographic or gravure processes or any modifications thereof.

Definitions in paragraphs (2), (3), (4) and (10) of this paragraph shall not be deemed to include any office machinery and collateral equipment as listed in General Limitation Order L-54-c, as Amended, operating supplies and replacement parts for same, and the material produced by same.

(c) *Restrictions on acceptance of orders for production and delivery of graphic arts machinery.* (1) On and after January 30, 1943, no person shall:

(i) Produce any graphic arts machinery, except for the use of the Armed Forces outside of the U. S., its territories or possessions or on shipboard and then only upon an approved order to deliver or accept delivery;

(ii) Deliver or accept delivery of any graphic arts machinery unless such delivery is upon an approved order except as provided in paragraph (c) (3) hereof.

(2) *Auction sales, sales pursuant to court order and similar transactions.* Dispositions of used graphic arts machinery at auction, at sheriff's sales, at tax sales, in liquidations of all or part of the business, and in similar transactions must be approved orders unless such dispositions are made within the limits specified in paragraph (c) (3) (v).

(3) *Exempted transactions.* Nothing in this order shall be construed to prohibit any of the following transactions:

(i) The seizure of graphic arts machinery (but not subsequent disposition or use thereof) upon default, by any person pursuant to the terms of a conditional sale agreement, chattel mortgage, pledge, or other security agreement; and the distraint or levy by execution (but not subsequent disposition thereof) by tax authorities.

(ii) The delivery or acquisition of graphic arts machinery (but not subsequent disposition thereof) through a

transfer by will or intestacy, or a transfer by operation of law to a trustee, receiver, or assignee for the benefit of creditors, in bankruptcy, insolvency, receivership, or assignment for the benefit of creditors.

(iii) The delivery or acquisition of graphic arts machinery as part of a transaction, such as merger, consolidation, sale and purchase of assets, sale and purchase of stock or lease of plant, involving the transfer of all or substantially all of the assets of an enterprise, where no liquidation or dismemberment of assets is contemplated.

(iv) The delivery or acquisition of graphic arts machinery (but not subsequent disposition thereof) as a trade-in, where the machinery to be installed is delivered pursuant to an approved order.

(v) Deliveries to, and acquisitions by distributors of used graphic arts machinery (but not subsequent dispositions thereof) at auction, sheriff's sales, tax sales, liquidations or otherwise.

(vi) The delivery of graphic arts machinery for repair and return, the return of a repaired machine, and the loan of a machine to the user, for a period not to exceed ninety (90) days, pending the repair of the damaged machine.

(vii) The delivery and acquisition of graphic arts machinery for scrap.

(viii) The unloading, from a vessel, of any imported graphic arts machinery.

(ix) The transfer of any interest, in any written instrument evidencing an interest in graphic arts machinery: *Provided, however*, That nothing in this subparagraph (ix) shall be construed to permit the physical delivery or use of such graphic arts machinery.

(x) The delivery, acquisition and production of graphic arts machinery, the delivery and acquisition of which has been approved prior to January 4, 1943, under General Conservation Order L-83 on Form PD-1A carrying a preference rating of A-9 or higher.

(xi) The delivery and acquisition of graphic arts machinery approved on Form PD-200.

(xii) The delivery and acquisition of graphic arts machinery which was delivered to the original user prior to May 1, 1937.

(d) *Restrictions on the production of operating supplies used in the graphic arts processes.* During the first calendar quarter of 1943 or any calendar quarter thereafter, a producer of operating supplies used in the graphic arts industry shall limit his production of such supplies to a quantity having a sales value of not more than 18% of the combined sales value of such supplies sold by him during 1941 and shall limit his inventory of such supplies to a quantity having a sales value of not more than 133% of the combined sales value of such supplies sold by him during the preceding calendar quarter.

In the event that a producer's inventory of operating supplies is or should at any time become in excess of 133% of the combined sales value of such supplies sold by him during the preceding calendar quarter, he shall limit his production of such supplies to a quantity having a sales value of not more than 6% of the combined sales value of such supplies sold by him during 1941.

(e) *Restrictions on the production of replacement parts.* During the first calendar quarter of 1943 or any calendar quarter thereafter, a producer of replacement parts used in the graphic arts industry shall limit his production of such parts to a quantity having a sales value of not more than 30% of the combined sales value of such parts sold by him during 1941 and shall limit his inventory of such parts to a quantity having a sales value of not more than 133% of the combined sales value of such parts sold by him during the preceding calendar quarter.

In the event that a producer's inventory of replacement parts is or should at any time become in excess of 133% of the combined sales value of such parts sold by him during the preceding calendar quarter, he shall limit his production of such parts to a quantity having a sales value of not more than 18% of the combined sales value of such parts sold by him during 1941.

(f) *Restrictions on sales of operating supplies and replacement parts to consumers.* (1) On and after January 4, 1943, no producer or distributor shall sell or deliver any operating supply or replacement part to a consumer who fails within 30 days after receipt of a supply or part, ordered on or after January 4, 1943, to:

(i) Deliver to said producer or distributor a used part of similar kind or size for each new replacement part or operating supply delivered to the consumer or

(ii) Certify to said producer or distributor that he has disposed through scrap channels of a used part of similar kind and size for each new replacement part or operating supply delivered to the consumer.

(2) Notwithstanding the provisions of paragraph (f) (1) (ii), a producer may not install replacement parts in the con-

Ad Men's Zinc Conservation Plan Is Approved by War Production Board

"CONSERVATION of material is often achieved simply by applying keen thought to a Limitation order," it is asserted by the Conservation Division of WPB in approving a twelve point zinc-saving program sponsored by the Advertising Club of Washington. The program stresses common-sense conservation measures such as standardizing signatures and trade marks for continuous use, eliminating designed art borders, and making use of paper mats from mat services or newspapers. The program is a consensus of newspaper advertising executives, advertising agencies; department, food and specialty store advertising managers, and radio stations.

The suggestions are as follows:

1. Border cuts must not be made. Use standard type borders and their combination. (a) Design art borders only when they can be used frequently.

2. Screened type must not be used. (a) Don't use double printing on Ben Day or wash background.

3. Don't prepare hand lettering. Use available type. (a) Don't use blown-up type when it is possible to select suitable type faces available in necessary sizes.

4. Do not tie one piece of art onto another in a manner that creates waste areas. (a) Don't tie in extended type-text with illustration, so as to increase zinc area.

5. Make all cuts, so far as possible, that they may be adapted to future use. (a) Use cuts over again as often as possible.

6. Don't order the same engraving to be made more than once. Newspapers exchange cuts—so, when ordering a repeat advertisement or a layout, utilizing illustrations that appeared in a previous advertisement, please specify where and when the cuts last appeared so that they can be picked up for re-use. If publishers or printers are to store your cuts, be sure to indicate the ones which will be used repeatedly so that they will be saved.

7. Use mats from mat services or newspapers.

8. Newspaper mats will be saved for 60 days, if advertisers indicate that such practice will avoid remaking cuts previously used.

9. Standardize size and style of signatures and trade marks for continuous re-use.

10. Develop efficient filing system of often-used cuts; paste pictures of cut on outside of envelope for easy identification.

11. In preparing art work, use standard reductions—"same size," "third off," "half off"—to save time and zinc in engraving plant.

12. Return all unusable zinc to your engraver, newspaper or printer. (WPB rules that anyone holding "obsolete plates" after September 30 will not be entitled to new plates during the calendar quarter.)

sumer's machine unless the producer shall receive from the consumer at the time of such installation a used part of similar metal content, size and kind for each used replacement part or operating supply delivered to the consumer.

(3) Excluded from the provisions of paragraph (f) (1) are sales of operating supplies and replacement parts to the Armed Forces or to consumers outside of the continental U. S. or on shipboard.

(g) *Requirements for obtaining an approved order.* Any person seeking an approved order for graphic arts machinery shall file Form PD-556 containing all information requested by said form and, in addition, shall make answer in Section 5 of said form to the following questions:

(1) Is the machinery an expansion of existing facilities or a replacement, and if the latter, what disposition will be made of the existing machinery?

(2) Does the applicant have in use any machinery similar to that for which application is made?

(3) How does the applicant now accomplish the work for which is required the machinery applied for?

(h) *Records.* All persons affected by this order shall keep and preserve for not less than two years accurate and complete records concerning inventories, production and sales.

(i) *Reports.* All persons affected by this order shall execute and file with the War Production Board such reports and questionnaires as the Board shall from time to time request.

(j) *Violations.* Any person who wilfully violates any provision of this order or who, in connection with this order, wilfully conceals a material fact or furnishes false information to any department or agency of the United States, is guilty of a crime, and upon conviction may be punished by fine or imprisonment. In addition, any such person may be prohibited from making or obtaining further deliveries of, or from processing or using, materials under priority control and may be deprived of priorities assistance.

(k) *Appeals.* Any appeal from the provisions of this order shall be filed on Form PD-500.

(l) *Communications.* All communications concerning this order, shall, unless otherwise directed, be addressed to: War Production Board, Printing and Publishing Division, Washington, D. C. Ref: L-226.

Issued this 4th day of January 1943.

ERNEST KANZLER,
Director General for Operations.

Capital Equipment, Operating Supplies and Replacement Parts Schedule Affected by Order L-226

(Subject to WPB Revision—Ed)

Schedule A

MACHINE COMPOSITION

Automatic metal feeders.
Band saws.
Broaching machines.
Buffer and polishers.
Complete fonts of composing machine matrices.
Composing machine molds.
Composing room saw trimmers.
Line typesetting machines.
Line composing machine magazines.
Lino-saws.
Material makers.
Plunger cleaners.
Remelt furnaces and molds.
Rule casters.
Space band cleaners.
Single character type composing machines.
Single character type casting machines.

HAND COMPOSITION

Cabinets, type, storage, galley.
Composing frames.
Complete fonts of foundry type.
Dead metal frames.
Imposing tables or stones.
Line-up and register tables and devices.
Make-up frames.
Metal saws and trimmers.
Mitering machines.
Page make-up gauges.
Plate mounting (patent) bases.
Slug and rule cutters.
Trucks, galley, form, dead-metal.

PHOTOENGRAVING, LITHOGRAPHIC AND GRAVURE PLATE MAKING

Arc lamps.
Ben day machines.
Cameras and lenses.
Color filters.
Etching machines, baths and tanks.
Halftone screens.
Monel silver baths.
Monel evaporating dishes.
Nailing machines.
Planing machines.
Plate coating machines.
Plate graining machines.
Plate routers.
Plate beveler and trimmer.
Plate dryers.
Projectors.
Photo-composing machines.
Registering devices.
Vacuum backs for cameras.
Vacuum frames.

ELECTROTYPE, STEREOTYPE RUBBER AND PLASTIC PLATE MAKING

Casting boxes.
Cooling tables.
Electrolytic baths and tanks.
Jig saws.
Mat formers, scorchers and rollers.
Molding presses.
Plate curving machines.
Routing machines.
Rubber plate depth gauges.
Ruling moldings.
Saws and trimmers.
Shaving and planing machines.

PRESSES

Automatic press feeders and deliveries.
Auxiliary ink distributors.
Bronzing machines.
Cutting and creasing presses.
Drying racks.
Hand and automatic sheet and web-fed platen presses.
Hand and automatic fed flat-bed cylinder presses.
Hand and automatic fed flat-bed gravure presses.
Hand and automatic fed plate engraving presses.
Ink agitators.
Numbering machines.
Paper seasoners.
Proof presses.
Roller washing devices.
Scoring and perforating attachments.
Sheet and web-fed rotary letter presses.
Sheet and web-fed offset or direct lithograph presses.
Sheet and web-fed rotary gravure presses.
Sheet heaters, static eliminators and ink dryers.
Thermographic presses.
Transfer presses.
Varnishing machines.
Vibrating rollers.
Web-pasters.
Web-tension devices.
Web-slitting and re-winding machines.

BINDERY

Automatic feeders for folding machines.
Automatic and hand-fed trimmers.
Automatic feeders for board cutters.
Banding machines.
Bindery hand presses.
Binder's board cutters.
Binder's cloth cutters.
Book presses (drying; clamp units, power or hand).
Book sawing machines.
Case making machines.
Casing-in machines.
Cover shaping and bending machines.
Color spraying hoods and machines.
Cover spraying machines.
Corner cutting racks.
Eyeletting machines.
Forwarding machines (backers, liners, and headbanders).
Guillotine cutting machines, power and hand lever.
Gathering and inserting machines.
Gilding presses, screw type.
Gold and foil cover cleaning machines.
Hand and automatic fed folding machines
Headband forming machines.
Lettering presses.
Marbling troughs and clamps.
Mechanical binding machines.
Nipping machines.
Paper ruling machines.
Perforating machines.
Pamphlet covering machines.
Round cornering, punching, drilling and indexing machines.
Rounding and backing machines.
Rough-edging machines.
Round corner turn-in machines.
Sanding machines (edges).
Stripping machines.
Smashing machines.
Stamping, embossing and brass die-cutting and sinking machines and presses.
Stippling and graining machines.
Signature bundling presses (hand and power).
Skiving or paring machines.
Thread stitching machines, hand and automatic feed.
Thread sewing machines.
Tipping, pasting and gluing machines.
Wire stitching machines.

Schedule B

MACHINE COMPOSITION

Go No-go type high gauges.
Replacement matrices.
Space bands.

HAND COMPOSITION

Chases.
Composing sticks.
Imposing furniture.
Leads, rules and slugs.
Line gauges.
Plate hooks.
Replacement foundry type, borders, ornaments, etc.
Quoins and keys.

PHOTOENGRAVING, LITHOGRAPHIC AND GRAVURE PLATE MAKING

Routing bits.

PRESSES

Press fountain dividers.
Cylinder jackets for cutting and creasing presses.
Doctor blades (gravure).
Gauge pins.

BINDERY

Cutting-out dies.
Drills and punches (paper).
Graining plates.
Index cutting knives.
Needles and hooks
Paper cutter knives.
Perforator wheels and knives.

Magazine Paper Consumption

Restricted by 10%

ON December 31, 1942, the War Production Board issued General Limitation Order L-244 which affects the consumption of paper used by the magazine publishing industry. The order went into effect January 1. The general effect of the order is to reduce the consumption of magazine print paper by 10% of that consumed in the year 1942 which is the base period. An exception is provided to the general restrictions contained in the order by means of which the general restrictions do not apply to any publisher who uses 25 tons or less of print paper in any calendar quarter for the printing of his magazine or magazines.

The text of General Limitation Order L-244 is as follows:

Section 3133.15—General Limitation Order L-244.

(a) *Definitions.* For the purposes of this order:

(1) "Person" means any individual, partnership, association, business trust, corporation, governmental corporation or agency or any organized group of persons, whether incorporated or not.
(2) "Magazine" means any periodical recognized as a magazine in the magazine industry, regardless of frequency of issue.
(3) "Printing" means the act or process of printing, impressing or otherwise transferring onto print paper any ink, color, pigment, mark, character or delineation.
(4) "Publisher" shall include, but not by way of limitation, any person issuing one or more magazines.
(5) "Print paper" means any grade or quality of paper used in the printing of a magazine, or used in the printing of material physically incorporated into a magazine.
(6) "Base period" means the year 1942.
(7) "Director" means the Director General for Operations.

(b) *General Restrictions. On and after January 1, 1943:*

(1) No publisher shall use, or cause to be used for his account print paper for the printing of his magazine or magazines, during any calen-

dar quarter in excess of 22½% of the amount of print paper used by him or for his account, for such purpose, during the base period; provided that a publisher may, in any calendar quarter, use up to 15% more than his quarterly quota for such purpose, the excess to be deducted from the quota of the succeeding calendar quarter; and provided further, that a publisher may, in any calendar quarter, use additional print paper for such purpose, equivalent to the less-than-quota usage of any preceding calendar quarters.

(c) *Exceptions.* The restrictions of paragraph (b) hereof shall not apply to any publisher who shall use, on and after January 1, 1943, 25 tons or less of print paper in any calendar quarter for the printing of his magazine or magazines.

(d) *Miscellaneous Provisions*

(1) *Applicability of Priorities Regulations.* This order and all transactions affected thereby are subject to all applicable provisions of the Priorities Regulations of the War Production Board, as amended from time to time.

(2) *Reports.* All persons affected by this order shall execute and file with the War Production Board such reports and questionaires as the Director shall from time to time require.

(3) *Records.* All persons affected by this order shall keep and preserve for not less than two years accurate and complete records concerning their inventory, use and sales of print paper, subject to the inspection of the duly authorized representative of the War Production Board.

(4) *Appeals.* Any appeal from the provisions of this Order shall be made by filing a letter in triplicate, referring to the particular provision appealed from, stating fully the grounds of the appeal.

(5) *Communications to the War Production Board.* All reports required to be filed hereunder and all communications concerning this order shall, unless otherwise directed, be addressed to:

"War Production Board
Printing & Publishing Division
Washington, D. C. Ref: L-244"

(e) *Violations*

Any person who wilfully violates any provision of this order, or who, in connection with this order, wilfully conceals a material fact or furnishes false information to any department or agency of the United States is guilty of crime, and upon conviction may be punished by fine or imprisonment. In addition, any such person may be prohibited from making or obtaining further deliveries of, or from processing or using, material under priority control and may be deprived of priorities assistance.

Issued this 31st day December, 1942.

Ernest Kanzler
Director General for Operations

Newsprint Limitation Order L-240

THE tonnage of print paper a newspaper publisher may use in 1943 will be 100% of the amount used by him to produce his net paid circulation in 1941 plus a spoilage allowance, the War Production Board announced on December 31. Action was taken through the issuance of Limitation Order L-240, effective January 1, which closely follows recommendations made by the Newspaper Industry Advisory Committee at a meeting in Washington with WPB officials on December 10.

The Printing and Publishing Division of WPB estimates that the order will effect a reduction of approximately 10% in current consumption of print paper, but stressed the fact that this was an overall estimate for the industry and by no means meant that each publisher would be cut 10%. Under the order some publishers will be cut more and some less, depending upon how they use their allotment of print paper, a matter entirely up to them. The great majority of the weeklies and the small town dailies will not be affected at all.

W. G. Chandler, Director of the Printing and Publishing Division of WPB, and Donald J. Sterling, consultant to the chairman on the newspaper and publishing industries, made the following joint statement in connection with the issuance of the orders:

"This order we believe to be an equitable one that will meet the immediate requirements of the War Production Board for the conservation of print paper in the conduct of the war effort. It will provide a levelling off period during which newspaper publishers may gear their publications to additional cuts that may come later.

We recognize that under the strict terms of the order some newspapers, particularly those whose circulations have increased greatly since 1941, may appear to be hard hit. As the order will be administered, however, no undue hardship will be caused any newspaper. There are established practices of appeal with WPB, and appeals under the order will be acted upon rapidly and as equitably as possible."

Order L-240 restricts the newspaper publishers, but has the effect of equally curtailing the newspaper printer since in the majority of cases newspapers are printed in captive plants owned by the publishers.

Following are the major provisions of the order:

(1) "Newspaper" is defined as any publication usually recognized as a newspaper in the newspaper industry regardless of the frequency of issuance.

"Printing" means the act or process of printing, impressing, or otherwise transferring onto print paper any ink, color, pigment, mark, character or delineation.

"Publisher" means anyone issuing a newspaper.

"Print paper" means any grade or quality of paper used in the printing of a newspaper, or used in the printing of material physically incorporated into a newspaper.

"Net paid circulation" means the sales of a publisher's newspaper audited, or otherwise verified, in accordance with the standards of the Audit Bureau of Circulation.

"Base period" means the year 1941.

(2) No publisher, or any person for his account, is allowed to buy, acquire, or in any manner accept delivery of print paper except for the printing of the publisher's newspaper.

(3) No publisher is allowed to use or cause to be used for his account, print paper for the printing of any newspaper during any calendar quarter in excess of 100 per cent of the amount of print paper used by him, or for his account, in the printing of the net paid circulation of his newspaper during the corresponding calendar quarter of the base period.

(4) In order to compensate for the print paper lost to a publisher in wrappers covering paper delivered to him by his supplier, and that lost to him through damage in transit and in printing spoilage, he may add to the total quarterly amount of the print paper authorized three per cent of the total amount of print paper used by him in the printing of the net paid circulation of his newspaper during the corresponding calendar quarter of the base period.

(5) The following are exempt from the order:

Any publisher who shall use on and after January 1, 1943, 25 tons or less of print paper during any calendar quarter. To this quota may be added any print paper used by the publisher to produce copies of his newspaper furnished to the Armed Services of the United States.

Any newspaper of eight pages or less authorized to be admitted to the mails as second class matter under the provisions of Section 521 of the Postal Laws and Regulations of 1940, pertaining to the publication of benevolent, fraternal, trades-union, professional, literary, historical, and scientific organizations or societies.

(6) Any loan of print paper made by a publisher must be reported by him in a letter sent in triplicate to WPB within 30 days of the loan.

Print paper, the Division emphasized, is regarded as essential, but the pulp wood shortage now developing has made necessary a curtailment in the size of newspapers, magazines and in the use of paper in almost every other type of civilian use.

With careful planning, however, the curtailment can be effected without disruption of the industry. The object of the order is to keep a balance between the total supply and the essential requirements for paper.

Working together on the paper problem for many months have been committees from the wood pulp industry, as well as Government representatives from the Printing and Publishing, Pulp and Paper, and Containers Divisions, Lend-Lease officials, Army and Navy officers, the Board of Economic Warfare and the Division of Civilian Supply and Labor Production Division of WPB.

They came to the conclusion that the supply of pulp wood available for consumption in the United States and Canada in 1943 would be 25 per cent less than that used in 1942; but that by drawing on the inventory on hand at the close of the year that figure might be reduced to 20 per cent.

Provisions of paragraph (b) (1) and (2) in the order are inapplicable to any newspaper of 8 pages or less, which is authorized to be admitted to the mails as second class matter under the provisions of Section 521 of the Postal Laws and Regulations of 1940, pertaining to the publication of benevolent, fraternal, trades-unions, professional, literary, historical and scientific organizations, or societies.

Use of Paper for Commercial Printing Restricted by 10% of 1941 Base Period

LIMITATION Order L-241 affecting commercial printers was issued by by WPB on January 8. Main provisions of the order are the restrictions on the weight of paper which a commercial printer may put into process ?production of printed matter). The base period referred to in the order is the calendar year 1941.

In the order it is provided that:

"(1) During the first calendar quarter of 1943 or any calendar quarter thereafter no printer shall put paper (or paper-like substance) into process in excess of either of the following schedules:

"(i) 22—% of the gross weight of paper (or paper-like substance) put into process by him during the base period.

"(ii) 90% of the gross weight of paper (or paper-like substance) put into process by him during the corresponding quarter of the base period.

"(2) Notwithstanding the provisions of (1) above, no printer during the calendar year 1943 or any calendar year thereafter shall put into process paper (or paper-like substance) in excess by weight of 90% of the gross weight of paper (or paper-like substance) put into process by him during the base period."

In this Limitation Order L-241, "printed matter" is defined as any paper (or paper-like substance) with ink applied to it by the relief, planographic, intaglio, silk screen or other stencil processes or any combination of modification thereof.

Excepted Printed Matter—Because they are covered by other Limitation and Conservation Orders which have been issued by WPB, provisions of this Limitation Order L-241 do not apply to the production of printed matter enumerated as follows: "A newspaper (as defined in G.L. Order L-240); wall paper (as defined in G.L. Order L-177); a box (as defined in G.L. Order 239); any converted paper product (as contained in List A and List B of General Conservation Order M-241-a); a magazine (as defined in G.L. Order L-244); a book (as defined in G.L. Order L-245), and also to printed matter produced by or for the account of any department or agency of the United States or any State, County or Municipality in the United States, its territories or possessions."

Book Publishers Restricted to 90% of Paper Tonnage of 1942 Base Period

THROUGH Limitation Order L-245, the amount of print paper book publishers may use during 1943 was limited on January 8 by the Director General for Operations to 90% of the tonnage of paper used by each publisher during 1942.

Restrictions also are put into effect on paper for reprinting. On and after the effective date of the order, publishers who wish to reprint books are required to reduce by 10% the weight of paper used in each copy of the book as last printed prior to January 8.

There are, however, two exceptions to this provision. The first exempts books the last printing of which occured before the effective date of the order, January 8, when such books were printed on paper of a 40 lb. base weight or lighter, and will be reprinted on a paper of equal or lighter base weight.

The second exempts books, the paper for which was ordered prior to January 8, and is scheduled for delivery to, or for the account of, the publisher within 45 days after January 8. These two exceptions, however, do not exempt the publisher from the over-all 90% limitation on the use of paper.

Priorities Regulation No. 10 Revoked

UNDER date of November 5 (official announcement for which was not received at this office until December 28), Ernest Kanzler, Director General for Operations of WPB, announced that Priorities Regulation No. 10 establishing the Allocation Classification System is revoked. This is the WPB order which directed that purchase orders for materials and supplies be supplied with symbols to enable WPB to trace the flow of materials in terms of end use.

Limitation Order Governs Manufacture and Purchase of New Electric Motors

ON December 4, WPB issued General Conservation Order L-221. The order relates to the manufacture, sale, purchase and use of electric motors and generators. Motors from 1 h.p. up and generators from ¾ k.w., up to and including 6000 k.w., are covered by the order.

On December 11, Limitation Order L-221 was amended by WPB. The amended order establishes February 1, 1943, as the date upon which restrictions on deliveries of electric motors and generators become effective.

Of principal interest to printing plant executives are provisions that a purchaser of a new motor or generator shall have no idle motor or generator in his pos session which is adaptable for the purpose. The purchaser shall have attempted to obtain from at least three dealers a used motor or generator for the purpose for which the new motor or generator is sought to be purchased. The motor or generator is not purchased for replacement of existing equipment. The motor or generator is required for installation within the shortest practicable time after delivery and is not for standby purposes. It is provided that a motor or generator shall be deemed installed (and not standby) equipment when it is connected to the purchaser's load and electrical system, notwithstanding that the purpose of such equipment may be emergency relief service. A purchaser of a new electric motor must show that the horsepower of the motor he is applying for is no greater than that required to do the job.

The delivery or acceptance of motors is prohibited unless they comply with certain standard specifications and are of the simplest practicable mechanical and electrical design. The purchaser is required to certify and show reason why he must have a motor of a special type; and the order restricts the use of such special types to the conditions and the purposes for which they are required. For example, it limits the use of explosion proof motors to hazardous locations.

In the order it is stipulated that a purchaser when placing an order with a manufacturer or dealer for delivery of a motor or generator must accompany the purchase order with a certification which is as follows:

"The undersigned hereby certifies that:

(A) (i) He has no idle motor (or generator) in his possession, except the following which is not adaptable to his purpose for the reasons stated below:

.....

(ii) He has been unable to obtain a used motor (or generator) for his purpose from the following dealers (at least three):

.....

(iii) The motor (or generator) is not for purposes of replacement of existing equipment (except as otherwise authorized by the Director General for Operations, upon appeal, when copy of authorization is to be attached):

.....

(iv) The motor (or generator) is required for installation within.....days after delivery and is not for standby purposes.

(B) The motor or motors described in the within (or attached) order, or orders, are in compliance with paragraph (c) (1) of General Limitation Order L-221 as follows:

.....

(Here explain how design of motor meets requirements of each subdivision of paragraph (c) (1)).

(C) Horsepower required has been carefully determined in accordance with paragraph (c) (2) (i) and the horsepower rating of the motor or motors is in accordance with paragraph (c) (2) (ii) as follows:

.....

(Here describe method of determining horsepower rating in accordance with said paragraph)

(D) (If the motor is a. c., 25 h. p. or below, and does not have a synchronous speed of at least 1800 r. p. m. at 60 cy. (4 pole winding) and corresponding speeds at other frequencies, here provide the purchaser's certification required by paragraph (c) (3) (i).

.....Company

By.....
(Authorized Official)

Bronze Powder Released to Printing and Publishing Industry M-9-c-3 as Amended

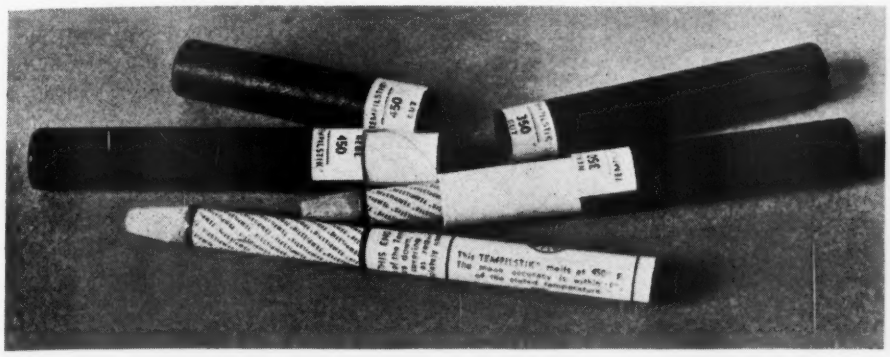
AN estimated half million pounds of bronze powder and bronze powder products have been released by WPB for uses which previously had been prohibited after December 31. This action (Copper Order M-9-c-3 as Amended on December 28, 1942, by the Director General for Operations), was taken because all inventories usable by the Army and Navy have been purchased by the services. The material released is unsuitable

(*Continued on Page 33*)

ZINC CONSERVATION

In the February issue of *Printing Equipment Engineer* will appear an article describing a method for conserving the use of photo-engraving zinc in advertising and printed matter. The idea has been passed on to us by a very well known typographer.

Equipment and Supplies



Temperature Indicators Hold Promise for Graphic Arts

A MAJOR deterrent of standardization of production in many of the Graphic Arts processes has been the inability to make reasonably accurate temperature measurements. For years, various irregularities of results that have plagued production executives were traced directly to the improper temperatures of metals, equipment, etc. Now new simple temperature indicators—called Tempilstiks are available. They are sponsored by Fisher Scientific Co. Their use involves no more effort than is needed to draw a line with a piece of chalk.

Tempilstiks look like colored crayons but are made of materials which melt at specific temperatures. Marks made with them provide the means of observing when certain temperatures exist or have been attained. The new measuring devices are available in the range of 125 deg. Fahrenheit to 700 deg. Fahrenheit and are claimed to have an accuracy within 1% of the stated melting point.

These temperature indicators serve a similar purpose but act in a lower range of temperatures than do Seger Pyrometric Cones which laboratorians have long employed to observe temperatures above 1065 deg. F. Tempilstiks can be used wherever there is a surface upon which a mark can be made. A mark made with a Tempilstik melts and becomes shiny in appearance when this melting point is reached.

Tempilstiks have wide applications in many heat treating operations, and have been adopted especially to signal desired pre-heating temperatures in the welding of steels, alloys, cast iron and non-ferrous metals; for local heating, heat treatment, and fabrication of metals generally. Surface temperatures of machinery and motors are readily measured with Tempilstiks. Bearings and insulation can be protected by marking the surface with a Tempilstik and noting when or if a dangerously high temperature is reached.

Many Graphic Arts Applications for Tempilstiks suggest themselves, such as the following:

- Stereotype Casting Box Temperatures
- Scorcher Surface Temperatures
- Zinc "Burning-in" Temperatures
- Preheating Temperatures of Stereotypes or Electrotypes Prior to Curving
- Molding Press Platen Temperatures
- Approximate Melting Point Temperatures of Type Metals
- Composing machine metal pot mouthpiece and mold temperatures
- Warming and Preheating Cabinets
- Press and Roller Bearing Temperatures
- Hot Embossing Plate Temperatures
- Plastic Plate Molding Platens

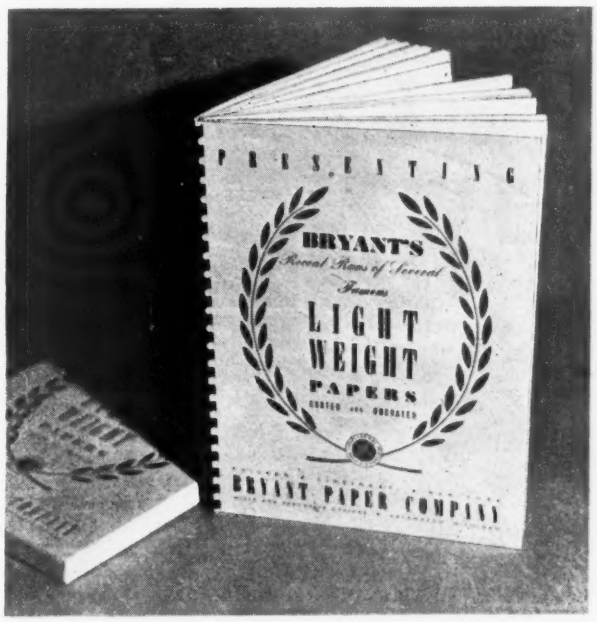
This list will undoubtedly be augmented by progressive production executives. When the temperature of processes to be controlled is the same from day to day, only one Tempilstik of the desired melting point need to be purchased. Several may be required when the progress of temperature rise is to be noted and the entire set of fifteen Tempilstiks will meet all requirements within their range.

Each Tempilstik is a different color for easy identification. When marks are made on a surface with two or more Tempilstiks of consecutive melting points, for example, with a light brown mark of 125 deg. F. and a light green of 150 deg. F., it is quite easy to determine when the temperature reaches each value. Tempilstiks are furnished in a paper case and each has a foil covering for protection.

Tempilstiks are available to indicate the following Fahrenheit temperatures:

125 deg.	275 deg.	500 deg.
150 deg.	300 deg.	550 deg.
175 deg.	350 deg.	600 deg.
200 deg.	400 deg.	650 deg.
250 deg.	450 deg.	700 deg.

All Tempilstiks have a mean accuracy within 1% of the stated value.



Lightweight Papers—A book entitled **Lightweight Papers,** published by Bryant Paper Company, Kalamazoo, Mich. The book is 8½ in. by 11 in. size. In view of our present economy, this presentation of lightweight papers is rather interesting, inasmuch as the company makes suggestions as to the uses for each kind of coated and uncoated papers shown in the book.

Multiple page specimens of lightweight papers are shown. Included among these are Imperial Manifold, Imperial Bible Papers, British Opaque English Finish, Milham English Finish, Featherweight Enamel, Milham and Sunbeam English Finish, Encyclopedia Brittanica and White Carbonate English Finish. Papers shown are intended for use in printing direct mail, mailing enclosures, bibles, books and catalogs.

Vegimal Vegetable Base Adhesive

Paisley Products, Inc., has announced a new series of vegetable base adhesives with a diversified range of applications in all industries, and particularly for use in the Graphic Arts. All of the new adhesives bear the trade name Vegimal in addition to the designation which indicates for what purpose they are to be used.

Vegimal adhesive base is made from non-critical materials and provides a range and flexibility of action similar to that of animal base adhesives. It can be applied by machine, brush application, spreading or dipping, diluted with water or used as received. It will permanently adhere combinations of papers, cardboards, fabrics, leathers, imitation leathers, and the like. It retains flexibility and

freedom from shrinkage, pulling action or warp.

In appearance, Vegimal is a viscuous, light tan-colored liquid. Is freely miscible in water. Weight, 10 lbs. per gal. Made by conversion of domestic starches with plasticizing chemicals added to produce various drying or setting speeds. At room temperatures, undiluted, it is difficult to spread; heated to approx. 125 deg. F. it liquifies and spreads to a gelatinous cohesive film. The film is instantly tacky and remains so for considerable periods of time before drying, depending upon the formulation.

The properties of Vegimal, it is said, are such that it can be used for gluing paper to paper, cardboard, fabric, leather, glass, ceramics, wood; cardboard to fabric; fabric to leather and wood; leather to leather and wood; wood to wood. It may be used as sealer coat to wood, plaster, wallboard and fabrics. It may be used as filler and stiffener for papers and fabrics. It may be used as a binder for folded paper products, wood flours and sawdust, ground cork, papier mache and mineral wool. May be used as a sizing for internal stiffness. In compounding it may be used as an extender for ground animal hide or bone glues, and to improve adhesive qualities and flexibility of corn, tapioca, wheat, potato base pastes and glues.

Specific applications for Vegimal are in the paper box industry and in the bindery. Vegimal Tightwrap Glue when used in S&S tightwrap gummers is run hot with suitable dilution. Box wraps come off the gummer with a thin, even coating of Vegimal that retains its tackiness on the conveyor belt throughout the wrapping operation. Wastage of wraps is avoided as Vegimal retains its tack even though the machine is stopped for short periods. Vegimal Tightwrap Glue may also be used as a stripping or covering glue.

Vegimal Bindery Glue replaces ground animal glues in many gluing operations. Work gummed off retains its tack, permitting the operator to lay out several sheets at a time, so that the film will not dry until all folding and forming is completed. Although not quite as flexible as cake form flexible glues, states manufacturer, it does have inherent flexibility and freedom from crystallization.

A technical service bulletin has been published by Pailsey Products, Inc., copies of which may be obtained from that company direct, or through *Printing Equipment Engineer*.

Loose-Leaf Tauber-Tubes

The Loose-Leaf Tauber-Tubes have been perfected recently, according to Lewis P. Nachod, Sales Promotion Manager of Tauber-Tube Binding, 200 Hudson Street, New York. These loose-leaf tubes are easy to lock and unlock. They are available in red, white and blue plastic in the following inside diameters: ⅜ in., 7/16 in., ½ in., ⅝ in., ¾ in., ⅞ in. and 1 in. Tauber-Tube Binding also announces that its licensees can effect a great saving by ordering the Tauber-Twist, a popular type of plastic binding based on the coil principle, in unspaced lengths or in spaced lengths which contain multiple uncut Twists.

Color Code for Zinc and Base

IT has been announced by Imperial Type Metal Company that the Redibak coating on the reverse side of sheets of its various gauge thicknesses of photo-engraving zinc will be of different colors so that the gauge thickness can be recognized instantly by those who handle plates or cuts in the printing plant. In addition, the Company will furnish a coating material in small quantities of each color corresponding to the Redibak coating on the zinc plate stock. The coating can be applied to the top surface of bases of the different heights required to bring the cuts up to type high measurement in newspaper and other plants where cuts are mounted upon metal bases.

The different colors of Redibak acid resist coating applied to Imperial zinc photo-engraving plate stock are as follows: 16 gauge (0.065 in.) blue; 18 gauge (0.049 in.) red, and 21 gauge (0.032 in.) green.

In some instances, in composing room and stereotype department, where two or more zinc gauge thicknesses are used, workers might mount a cut upon the wrong height base or might consume unnecessary time in identifying the proper height base upon which to mount a cut. For this reason, Imperial is supplying the coating in small quantities, as stated above for application to the top side of bases. In this way, prepared metal base bearing the same color as the Redibak on the reverse side of a zinc engraving will be recognizable instantly. For instance, if a cut is made from 18 gauge (0.049 in.) zinc, the reverse side will bear the red Redibak coating and he knows that the proper metal base on which to mount the cut will also carry the red coating on its top surface. The coating material is applied to the basing material just like paint—with a brush.

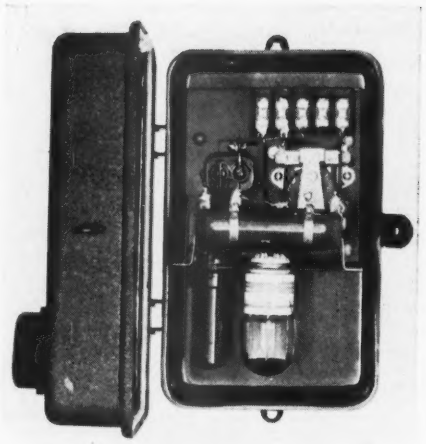
In addition the Company is prepared to furnish press board of the proper thickness for those customers who wish to back up the 18 gauge (0.049 in.) and 21 gauge (0.032 in.) to equal the standard 16 gauge (0.064 in.) zinc plate stock.

Improved Photoelectric Controls

Photoswitch Incorporated, has announced an improved series of photoelectric controls which have been designated Type A15.

Developments embodied in these controls include relay contacts designed to handle heavier loads directly, and conservatively rated at 10 amp., a.c. at 115 v. The output terminals are those of a single-pole double-throw switch, for either normally closed or normally open operation. This provides for action either when the light beam is broken or when it is made.

The operating range of Type A15 is 20 ft. with light source L30, and 40 ft. with light source L60. Type A25 is supplied with light source L30 for 50 ft.



Photoswitch's improved photo-electric control. Type A15 has an operating range at 40 ft. Type A25 (with proper light sources) will operate at 50 and 100 ft.

operation, and with light source L60 for 100 ft. operation.

Type A15 series provides operation for such applications as counting, conveyor control, machinery safeguards, signal and alarm systems, motor or valve control, inspection and break detection, as well as for many specialized processes.

Eastern Thin Gauge Zinc Backing

TO bring 18 gauge (0.049 in.) photo-engraving zinc up to the same thickness as the standard 16 gauge (0.064 in.) zinc photo-engraving plate stock, two newspaper mechanical executives have developed a 0.015 in. thick specially prepared fibre backing which is intended to be cemented to the plate as soon as it is taken out of the etching machine but before sending the plate to the router. The two executives who have succeeded in developing the backing process are Engraving Superintendent W. F. Alexander and Stereotype Superintendent George Fuller of the Cleveland *Press*.

The urge behind the idea for backing up thin gauge zinc plates is that to all intents and purposes, the mechanical departments affected will be handling a product which is similar to regular 16 gauge zinc. Other reasons are: (1) Line cuts can be produced with normal routing depth which will provide the pressman with line cuts reproduced in the stereotype plates of the same depth as heretofore so that (2) it will not be necessary for the pressman to compromise on normal ink roller or blanket cylinder adjustments. (3) The backed-up thin gauge line cuts also enables the stereotyper to employ his regular molding technique without compromising molding manipulation. (4) The backed-up line cuts eliminate the necessity for the composing room to send its strip material machine molds to the manufacturer for changing them over to cast a new height of basing material. (5) By using the new backing material, it will be seen that the use of more than one height of base in the composing room with attendant higher labor costs is obviated. (6) Also, it will not be

necessary for the stereotype department to bear the labor costs of shaving cast-base to any other than the regular 0.869 in. height as made before adoption of the 0.049 in. zinc.

It is said that the operation of cementing the backing to the etched plate consumes very little time, perhaps an average of 5 min. per 18 in. by 24 in. plate being required for both the cementing and drying operations. There is claimed to be nothing difficult in applying the backing so that it will cover the plate smoothly and without wrinkles or blisters. The Eastern backing materials, it is claimed, will not dull the routing tool.

It has been announced by Manager Edgar Mills of the Eastern Newspaper Supply, that his company will furnish this backing in 18 in. by 24 in. sheets, of 0.015 in. thickness, as well as the special cement which is used for fastening the backing to the engraved plates, which operation as stated above, is performed immediately after removing the plate from the etching machine but before sending it to the router.

Since the use of 21 gauge (0.032 in.) zinc will be confined to the making of halftones, Mr. Mills also states that he will supply the specially prepared fibre board in 0.032 in. thickness for underlay purposes. In this case the board would be used merely as an underlay on regular 0.854 in. stereotype base. In those plants where 0.854 in. steel base is used for mounting halftone cuts, a single thickness of the 0.032 in. board can be cemented permanently to the sections to bring each piece of steel base up to 0.886 in. height.

Mr. Mills said there will be a short delay in securing necessary materials for the backing process and that announcement will be made just as soon as they are available.

EXECUTIVE ¶s

Robert C. Corlett is now President and Treasurer of The Goss Printing Press Company, having been elected to that office during the Annual Meeting of the Directors of the Company in December. The other elections include J. A. Riggs, Vice President and General Manager; C. S. Crafts, Secretary and P. G. Tuttle, Comptroller.

Mr. Corlett became associated with the Goss Company 24 years ago, beginning work in the Engineering Department. This was upon discharge from World War I service in the Army which he had entered upon completion of his formal education at the University of Michigan. During his association with the Goss Company, he has held the office of Sales Manager, Secretary, Vice President and Treasurer, and has represented the company in Australia, New Zealand, Europe and South America.

Robert C. Corlett now heads the Goss Printing Press Company.

The company which he heads employs 1500 workers at present and is privileged to fly the All-Navy "E" burgee, with two stars denoting the second renewal of the original award made for outstanding production of naval ordnance.

Albin K. Schoepf, President of General Printing Ink Corporation, has announced the advancement of John F. Devine to Operating Vice President of the Corporation. Announcement was made September 16 just passed.

Ralph Randall, who has worked in the Chicago city territory for the Western District of the Harris-Seybold-Potter Company, is now Lieutenant Randall of the Army Air Corps. Randall joined the Harris organization on January 15th, 1934. He worked under the direction of Vice President and Western District Sales Manager, Wm. Guy Martin. The entire Harris organization, as well as printers and lithographers throughout the Chicago territory join in wishing Lieutenant Randall the utmost success.

Harris-Seybold-Potter Company's Ralph Randall is now a lieutenant in the Army Air Corps.

C. D. Bucher has been appointed director of purchases for The Dayton Rubber Mfg. Co. He succeeds J. C. Cunningham who resigned recently.

Stanley C. White, who came to the Lithographers National Association, Inc., New York, six years ago as Cost Engineer, enlisted in the United States Naval Reserve and has been commissioned a Lieutenant (Senior Grade) in the United States Naval Reserve. For some time Mr. White had been a member of the United States Coast Guard Auxiliary giving one day a week to Coast Guard patrol work in waters around New York City. This is another "leave of absence" for the duration.

William Becker, a well known newspaper mechanical executive, has succeeded Gene Doyle as mechanical superintendent of the Toledo, (O.) *Blade*. Mr. Doyle has retired because of ill health.

Private David Maxwell Weil is now somewhere with our armed forces. Before his enlistment into the United States Army last April, Mr. Weil was actively engaged with The Cromwell Paper Company, Chicago, in the capacity of secretary-treasurer. He graduated from Harvard College with Magna Cum Laude and became a Phi Beta Kappa. He spent a year in Harvard Law School, then turned to journalism and became foreign editor of the Chicago *Journal of Commerce*. In between times he served as honorary consul of El Salvador in Chicago and the Middle West. While at Camp Grant, he was invited to a reception in Washington, D. C., given in honor of King Peter, of Jugoslavia. He speaks fluently in French, German and Spanish.

Sec. - Treas. D. M. Weil of Cromwell Paper Co. is engaged with the armed forces as a private.

Must Exchange or Certify Disposal of Replaced Machine Parts

THE attention of mechanical executives is called to a provision of WPB's new printing machinery order, L-226 (discussed on page 7 and reproduced on page 9 of this issue) in which it is provided that the consumer (your company) must deliver to the manufacturer a used machine part of similar kind or size for each new replacement part delivered to your company within 30 days after receipt of the new part.

An alternative compliance with this provision is that within 30 days your company must certify to the manufacturer or distributor that it has disposed of, through scrap channels, the used part of similar kind and size for each new replacement part received.

The WPB order seems to place the responsibility for scrapping discarded machine parts upon the manufacturer and the distributor. You can be of great help to both by complying voluntarily with provisions of the order by either returning discarded parts to the firm from whom you purchased the new ones, or by seeing that your company makes the proper certification as to their disposal through scrap channels within the 30-day grace period.

Gauges and Tools *for maintaining line-composing machine parts in proper condition in the present emergency—Dowel pin and hinge pin bearing tightener a valuable tool*

By R. B. DENTON*

*Machinist, *Lansing State Journal*, Lansing, Michigan.

LIKE most men in contact with keeping printing machinery in good operating condition in these abnormal times, the writer has been giving a lot of thought to ways and means for facilitating the repair and maintenance of line-composing machines. While the gauges and tools described below were not developed on the spur of the moment, the writer wishes to pass along to others a means for maintaining machine parts in normal working condition and to extend the life of certain parts which may be increasingly difficult to obtain on short notice.

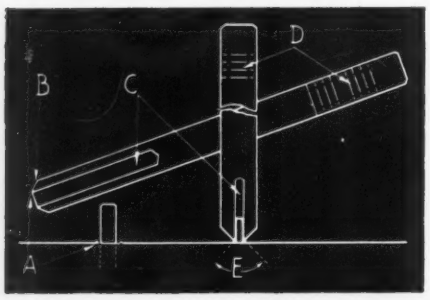


Fig. 1—Tool for tightening dowel pins in line-composing machine parts such as distributor box plates, spaceband transfer lever pawl or assembling elevator gate hinge pin holes. How the tool operates is indicated at *A*.

It has always seemed to me that in the case of hinge pins and dowels particularly, the pin should be fitted properly so that it will be held snugly in one of the co-operating parts and yet permit separation without disturbing the pin which is intended to be embedded tightly. In this way, the life of important machinery parts will be extended and, in addition, contributing wear on other parts will be prevented.

Distributor box rails represent a case in point. It is important that the rails be positioned in correct and immovable position on the dowels rather than to depend upon the screws for holding the rail in proper position on the box plate.

Dowel and Bearing Tightener

Another problem of the machinist is the appearance of excess play in certain bearings. At times there may not be enough wear to warrant replacement of the parts and yet something must be done to eliminate the extra play for best operation and functioning of the parts, such as occurs in the bearing for the spaceband transfer lever pawl. By means of the tool illustrated in Fig. 1, it is possible to close the edges of either an enlarged dowel hole or the hole in a part bearing.

This punch is made from either $\frac{5}{16}$ in. or $\frac{3}{8}$ in. diam. drill rod and is cut to 3 in. length. After turning up the tool the punch end of the tightener is hardened to withstand wear. The hole *C* in Fig. 1 in the punch body is drilled very slightly oversize to allow insertion upon the dowel or bearing pin. The outside of the punch extremity indicated at *B* is tapered off at a 40 deg. angle. Then the inner edge of the opening in the tool body (shown at *E*) is countersunk slightly so that the punch will produce the swelling or swaged effect as at *A* when the punch is struck with a hammer.

To identify the punch diameters readily, the shank of each size tool can be marked as at *D* to indicate 64ths of an inch. I have made a set of these punches in sizes ranging by 64ths from $\frac{1}{16}$ in. to $\frac{3}{16}$ in. and have found them to be useful from time to time when repairing machine parts.

A few of the applications together with dowel tightener and bearing sizes are as follows: The $\frac{1}{16}$ in. size is required when

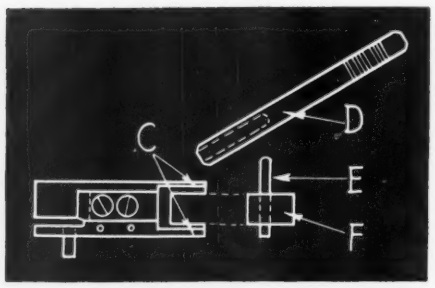


Fig. 2—Restoring worn hinge pin holes to normal size in a spaceband transfer lever pawl. In addition to the hole-reducing tool shown in Fig. 1, a ball bearing and pin punch are used to close the enlarged hinge pin holes at the inside surface of the lugs *C*.

tightening or installing new pins in the Linotype magazine channel guard strip. The $\frac{3}{32}$ in. size is required when tightening loose dowels in distributor box plates. For the spaceband transfer lever pawl or the assembling elevator gate hinge pin holes the $\frac{5}{32}$ in. size is required.

Spaceband Transfer Lever Pawl

One of the many uses for the dowel-tightening tool shown in Fig. 1 is that of closing in the outside edges of the hinge pin holes of a spaceband transfer lever pawl which have become slightly enlarged through wear. (See Fig. 2). The inside edges of the bearing holes may be closed in by a different method, which will be described below, after treatment for closing in the outside hole diameters has been described.

Before using the bearing hole closing-in tool for reducing the diameter of the holes *C* in outside edges of the lugs, it will be necessary to prepare a close fitting steel block *F*. This block is to be placed between the bearing lugs of the pawl to prevent springing or distorting the lugs when the closing-in tool is struck with a hammer.

After the steel block has been cut to size, a hole of the same size as the original diameter of the bearing pin holes is drilled through the body of the block. A short drill rod guide pin is then inserted in the hole in the block of sufficient length so that it will extend about $\frac{1}{4}$ in. above the upper lug of the pawl when the pawl is laid edgewise upon a solid surface preparatory to closing in the edges of the bearing holes on the outside surfaces *C* of the bearing lugs.

Now, with the block *F* and the guide pin *E* in proper position in the pawl, lay the pawl edgewise upon a solid surface. The bearing holes may be closed in with a closing-in tool *D*, the diameter of the opening of which is $\frac{5}{32}$ in., to collapse the metal slightly and restore the original bearing diameter.

To close in or reduce the diameter of the bearing pin holes at the inside surface of the lugs, lay the pawl edgewise on a solid surface. Place a $\frac{1}{4}$ in. or $\frac{5}{16}$ in. diam. ball bearing in the lower hole. Then insert a pin punch of proper diameter through the upper hole and place it in contact with the ball bearing. Strike the punch with a hammer to swell the stock around the hole to slightly close the worn opening. Repeat the operation for the enlarged hole in the other lug. A ball of either diameter mentioned above will not depress enough of the stock about the inner surface of the hole to cause looseness or side play in relation to the hinge bushing (B-101). After both operations described above have been completed and it is found that the holes have been closed too tightly, they may be reamed for accuracy.

Escapement Verge Spring Gauge

This gauge is intended to be used for determining the amount of tension which will be exerted by the spring against the escapement verge so that the pressure of

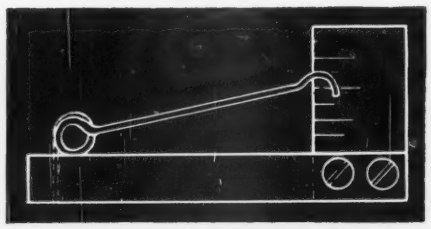


Fig. 3—Gauge for determining tension to be exerted by spring against escapement verges on Linotypes. After a long period of use, the spring can be flexed between thumb and finger to adjust tension properly.

all springs in the escapement bar will be alike. It is used principally when going over an escapement bar which has been used over a period of time. In this case, some of the most frequently used springs will have lost their proper tension—springs which operate the verges for lower case "e", "t", em and en quad, and the like.

The gauge stock is made from a piece of steel and is finished so it will measure ¼ in. by ⅜ in. by 3 in. long. A section of ordinary graduated steel scale (1⅜ in. long) is attached to the side of stock and is held in place by two round head 8-32 screws. A $\frac{3}{64}$ in. hole (to receive the spring shank without unnecessary looseness) is drilled in the opposite end of the stock. The tension for escapement verge springs of this type usually is satisfactory when the rounded movable end is adjusted to ⅝ in. setting as indicated in this diagram. The tension may be corrected easily to the desired setting by flexing the free end of the spring with finger and thumb while the shank remains inserted in the hole in the gauge stock.

Escapement Verge Spring Groove Scraping Tool

Illustrated in Fig. 4 is a tool for scraping the spring groove in Linotype escapement verges when the groove has become worn so that free rocking movement of the verge will tend to be delayed or locked by the impinging spring. The scraping tool is made from $\frac{5}{32}$ in. drill rod bent to the shape shown in the diagram. The inner end surface of the scraping hook is filed flat as shown, then the tip is shaped to conform with the curvature of the verge spring. The scraping tip should be hardened after finishing it to the proper shape. Usually, one or two light dragging movements of the scraper while a verge is held between the jaws of a vise will clean up a worn groove.

Gauge for Repairing Second Elevator Bar Link

It is desirable at all times to maintain a reasonably close relationship between the second elevator bar link hinge rod holes and the pin itself (G-70). When the holes or the rod, or both, become worn after a long period of use, the lost motion is likely to cause uncertain results in the maintenance of the second elevator transfer adjustments and the seating of the

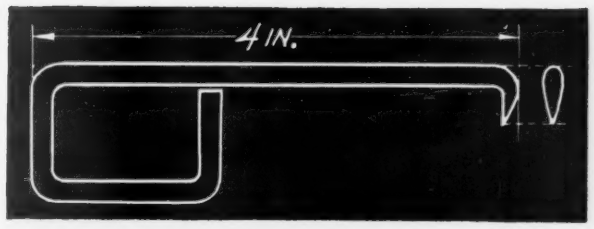


Fig. 4—This scraping tool is used for smoothing unevenly worn spring groove in Linotype escapement verges so spring and verge will not bind and interfere with full stroke of the escapement.

second elevator at the distributor in relation to the distributor box bar. The hinge pin holes in the link can be restored to normal size in accurate position by a brazing operation and the use of the gauge for locating accurately the position of the holes in the link legs as shown in Fig. 5.

The first operation consists of enlarging the worn hinge pin bearing holes *G*

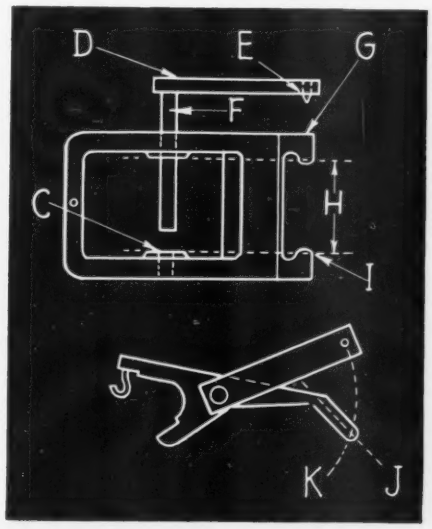


Fig. 5—Scribing gauge to be used for locating the exact position in which new holes for second elevator bar hinge pin rod are to be drilled after filling up the enlarged holes with bronze by brazing.

so as to insure a clean brazing job. The holes are filled with bronze and a slight pad of bronze is run over the inner surfaces of the legs as indicated at *I*. Then the original space between the legs, shown at *H* is provided by careful hand-filing.

After filling the holes with bronze and providing the pads *I* and dressing smooth with a hand file, it will be necessary to relocate the drilling point for the hinge pin bearing holes in the legs of the bar link.

For this purpose, the tool shown in Fig. 5 is suggested. In describing the tool, we will not give all the dimensions inasmuch as these should be obvious to the machinist. The tool, however, is made along the lines shown in the diagram. A length of ¼ in. drill rod is press-fitted into one end of steel bar stock, *D*. The stock *D* may be ¼ in. by ½in. by 2⅝ in. long.

Lay out the surface of bar stock and accurately prick-punch for 2$\frac{9}{16}$ in. center to center drilling to receive the press-fitted rod and scribing tip. If desired the length of bar stock may be increased ½ in. and an additional scribing tip attached 2$\frac{9}{16}$ in. center to center to likewise adapt the gauge for second elevator bar links used on continuous distribution models.

A pointed and hardened tip, *E*, likewise press-fitted into the opposite end of the bar *D*, is made from ⅛ in. drill rod. The tip *E* is intended to be used only as a scriber, not as a prick punch.

To use the hole-locating gauge, first dress off the two outer surfaces of the legs at *G*. Then scribe a straight line along the center of the outer side of each leg as at *J*. Insert the ¼ in. shank of the hole-locating gauge in the link hinge pin holes as shown in the upper diagram of Fig. 5. Swing the gauge so that the point *E* will describe an arc *K* in lower diagram, scribing a line over the filled-in hinge pin rod hole. The intersection of these two scribed lines *K-J* is to be accurately prick punched and then drilled with a ⅛ in. drill.

For best results in drilling bronze, lightly hone both sharp cutting lips of the drill while holding it in such a manner that its axis lies practically in the same plane as surface of stone. This tends to produce a shearing or scraping effect instead of cutting, which is most desirable when working bronze. Follow by using a reamer if necessary. If the drilling is done carefully, the holes will function like those in a new link.

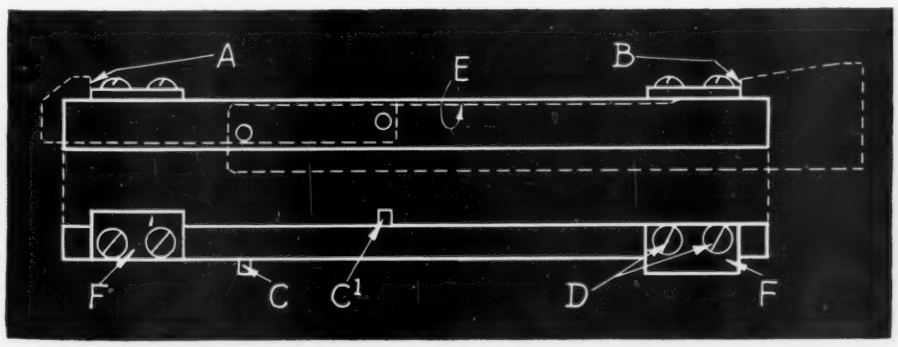


Fig. 6—Gauge for determining the worn condition of upper and lower distributor box rails. The rails wear at their vertical faces. The worn condition can be determined quickly with a feeler gauge inserted between gauging block and worn surface at *A* and *B*.

Distributor Box Rail Checking Gauge

The gauge shown in diagrammatic side and top view form, Fig. 6, is to be used for checking the extent of wear on the vertical faces of upper and lower distributor box rails. In the diagram, the right side is for checking the long, or upper rails. The left side of the gauge is used for checking the short or lower box rails. Both gauges are on the same bar stock.

The gauge bar measures ¼ in. by ⅜ in. by 5⅝ in. long. The $\frac{3}{32}$ in. diam. locating pins—the one at *C* for the long rail, and *C-1* for the short rail—are pressed into holes drilled in the gauge bar in proper position from opposite

sides of the bar. The gauging plates *F* measure $\frac{3}{32}$ in. by $\frac{3}{8}$ in. by $\frac{3}{4}$ in. long. The two holes in each plate are slightly elongated in order to locate the gauging edge of the plate exactly with a *new* distributor box rail. The plates are then tightened very securely with 6-48x$\frac{5}{16}$ in. rnd. hd. screws. Note that in adjusting the edges of the plates *F* against the vertical faces of the new box rails as at *A* and *B*, the rails and gauging pieces are to contact each other when the rails are mounted on pins *C* and *C-1*.

To use the gauge for checking the worn condition of the vertical faces of the upper and lower distributor box rails, the extent of wear can be determined by passing a feeler gauge between the worn vertical rail faces and the gauging pieces at *A* and *B*.

Before placing the rail on the gauge, stone the lower corner of the worn vertical face perfectly square. On the long upper rail, a 2 pt. lead can be placed between the stone and rail at *E* to support the stone perfectly square with the vertical face. This 2 pt. lead support for the stone compensates for the raised portion of the rail near the worn vertical face.

After the rail has been checked, the inner surface may be stamped (such as—2 or —4, to represent —0.002 in. or —0.004 in.) and then paired with another having the same extent of wear and tied with twine for future application. I have used rails having up to 0.015 in. wear by extending the tip of the distributor box bar point to correspond with the minus condition of the vertical face of the upper rails. It is hardly necessary to state that all four rails should be matched before tying them together.

How the War Influences Advertising, Printing and Lithography

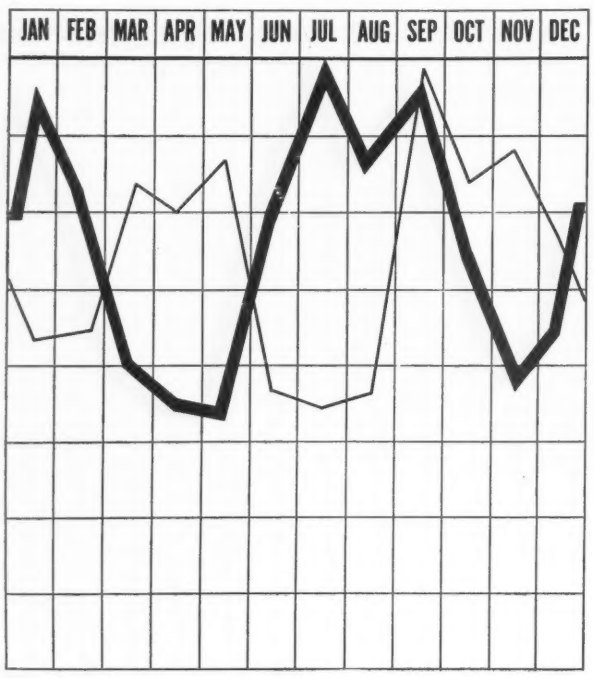
WHAT the all-out war effort means to advertising, printing and lithography is covered in a report of a survey undertaken recently by Herbert Kaufman, secretary of the Printing and Advertising Clinics which have been sponsored by General Printing Ink Corporation, 100 Sixth Ave., New York, N. Y. The survey was conducted among 116 cooperating firms in more than 60 different consumer-goods lines. While the names of the cooperating firms have been withheld as confidential, we understand their distribution is nation-wide, and as a result, the answers given in the questionnaires by the 116 cooperating firms may be considered a fairly good cross-section of the entire national distribution area.

The answers to some 17 questions asked in the original questionnaire are summarized by Mr. Kaufman in the report published by General Printing Ink Corporation. The "printing habits" of the replying firms are indicated in the summaries, as is the kind of printing which the cooperating firms expect to utilize in the immediate future.

As reported by 90 companies, the distribution of the manufacturer's dollar for advertising and printing is shown in a pie chart on page 11 of the report. The expenditures are as follows: Direct mail 25.7%; Trade journals 22.6%; General magazines 16.4%; Newspapers 12%; Other media—catalogs, posters, releases, etc. 11.7%; House organs 4.4%; Radio 3.5%, and Displays 3.7%.

In answer to the question: *What percentage of your business today is devoted to War Effort?* 24.9% companies today are devoted entirely to war production; only 15.5% are devoted to civilian products or services; 32.9% devote from 60% to 90% of their manufacturing to war materials; 16.3% devote from 10% to 50% of their manufacturing to war materials. Of these firms, 52.7% expect an increase in war effort for their companies; 4.3% expect a decrease; 32.7% believe ratios will be about the same.

The impingement of the war effort on advertising and printing consumption is indicated by 44% of the companies stating that they had curtailed printing during 1942, while 51.7% stated they had not. In answer to the direct question: *Do you expect to do more or less printing in the immediate future?*, 18.1% of the companies say more; 25% say less, and 51.7% say their volume will be the same as previously.



In this chart, the heavy line indicates periods when most printing and advertising are planned by the 116 consumer-goods companies replying to PAC questionnaire. (About 35% of the companies, however, plan steadily throughout the year).

The light line indicates seasonal peaks and valleys in the sale of much consumer goods. (About 33⅓% of the 116 companies have steady business volume throughout the year.)

In making up their budgets for advertising, printing and promotion, 80% of the companies use direct mail; 43% use newspaper advertising; 43% use general magazines; 78% use trade journals; 38% use house organs; 53% use various media, and 19% use radio.

A definite index showing the kinds of printing which will be required by the cooperating firms in the immediate future is as follows: 63% will want direct mail; 48% will want house organs; 45% will want enclosures; 40% will want instruction books; 36% will want catalogs; 33% will want institutional pieces; 27% will want employee relations printed matter; 21% will want public relations printed matter; 10% will want governmental aids printed matter; 9% will want conservation booklets; 13% will want various other forms of printing. In general forms of printing, 70% will want letterheads; 69% will want office forms, and 19% will have other general requirements.

The important question of the use of more or less color by the cooperating firms was answered as follows: 70.7% will use the same amount of color in printed matter as before; 11.2% will use more color; 7.8% will use less color.

Just what is in the minds of buyers of printing and lithography is indicated in their answers to some general service questions propounded in the questionnaire; 36% of the manufacturers insist on low price; 54% want technical help on plates, paper, etc.; 20% want layout ideas; 20% want creative ideas; 4% want copy ideas. In this connection, it is interesting to note that only 5% want quality foremost.

Answering the question: *Is it a policy of yours to submit your printing orders to open competition?*, 69.1% of the manufacturers say yes, and 27.5% say no.

With respect to ordinarily giving orders to the lowest bidder, 51.7% of the companies say they don't, and 43.1% of the companies say they do.

In answering the question related to what the printer and lithographer could do to be of real help to his customers and prospects, some praise and some criticism were incorporated in the replies.

One buyer submitted a list of Ten Commandments for those who deal with printers and lithographers, as follows:

(*Continued on Next Page*)

How the Processes are Divided

RECENTLY, General Printing Ink Corporation conducted a survey related to the use of advertising, printing and lithography and the effect the war has had and will have upon all three. In answer to one of the questions contained in a questionnaire, *What processes do you generally employ?*, 116 manufacturers of consumer-goods replied as follows:

86% use letterpress
61% use offset-lithography
25% use photo-offset
20% use silk screen
14% use rotogravure
6% use other processes

(The percentages above naturally total over 100, more than one process being used by the average company.)

1. Decide upon proper process.
2. Pick proper stock.
3. Decide upon inks.
4. Pick printing group best suited to do job.
5. Protect the company's interest by asking for competitive bids.
6. Use good judgment to balance quality against price.
7. Rate printers and lithographers upon basis of company experience with them.
8. Look for representative who knows his own business and is interested in the company's problems.
9. Insist on other things beside quality—notably promise of delivery, binding and packing details.
10. Expect cooperation and extend it to effect a good result.

Critical remarks about printing and lithographic representatives are: (1) Printers and lithographers send out men frequently who don't have any real working knowledge of printing; (2) A common weakness among salesmen is that they don't know the equipment in their plants; (3) A salesman from a two-press will call on one large account. This salesman should confine his efforts to a series of small accounts. (4) Many persistent complaints concern unkept delivery promises. (5) The printer should get out a booklet showing how economies are to be effected; another buyer suggests the printer prepare a handbook containing simple facts of production economy—paper and press sizes particularly economical in his own plant; show buyers how a pre-planned job makes an easier job for the printer and better results for customers. (6) One comment runs thus: "Printers sure need a jab in the fanny. They're the worst promoters I ever saw." Another comments that printers ought to practice what they preach—they should do some advertising.

Conference Postponed

Secretary V. G. Eck of the Northwest Mechanical Conference, states that the 1943 February conference has been postponed by the Board of Directors until a later date. All activities of the conference have been postponed indefinitely. If conditions permit, the conference will be held later in the year.

Addresses Pittsburgh Craftsmen

H. A. Porter, Vice President in Charge of Sales, of the Harris-Seybold-Potter Company, addressed the Pittsburgh Club of Printing House Craftsmen's Offset Night during the latter part of November. Mr. Porter talked on offset-lithography. He said offset is not antagonistic to any other printing method, and that each method should be used for the jobs to which it was best adapted.

He cited the unusual opportunity that existed in the Graphic Arts for more and more service to the nation in the war emergency. He pointed out that the winning of the war actually is the first business of all and expressed the belief that the Graphic Arts is especially fitted in its educational and informative work, on both the home front and the war front, to contribute immeasurably to victory.

He presented the Harris color movie entitled *Offset-Lithography*, which depicts the complete offset process from the planning of the job through the art work, plate making, press production and bindery, until the finished product is delivered to the customer.

Following the movie the meeting was thrown open to questions which covered copy preparation, camera work, film layout, plate making and press work.

New Year Statement

By H. A. Porter,

Vice-President, Harris-Seybold-Potter Company, Cleveland, Ohio

THE heritage of the Graphic Arts has been one of usefulness to all other industry. Because printing influences the way we think and even what we think about, it plays an important part in the lives of all. In 1943 the task of our industry is to devote its ability to the winning of the war. Our industry is in a preferred position to be of real value to America's war effort.

Now du Pont Pigment Dept.

Effective December 31, the Krebs Pigment and Color Corporation, which has been a wholly owned subsidiary of E. I. du Pont de Nemours & Co., Wilmington, Del., for the past eight years, is dissolved. In the future, its functions will be carried on by the Pigments Department of the du Pont Company. The same organization will continue to serve consumers of white and colored pigments in the same manner as heretofore.

An announcement stated that the Pigments Department of E. I. du Pont de Nemours & Co., which is the new name for the Krebs Pigment and Color Corporation, will continue to supply white zinc sulfide and titanium pigments and chemical dry colors to manufacturers of paint, linoleum, ink, leather, coated fabrics, paper, soap, rubber, rayon, shadecloth, ceramics and other products. Research activities will continue, as heretofore, to be directed toward the development of new and improved white pigments and dry colors.

Offers Special Course

Kansas State Teachers College, Pittsburg, Kas., through Supervisor of the Printing Department Leroy Brewington, is offering an operating course for emergency training of Linotype operators for Kansas newspapers. Each student will be given eight weeks' intensive instruction. The course may be taken by any man, woman or child of accountable age with functional background of English and average judgment and ability. Sponsorship by a newspaper or job shop is not necessary. Instruction in presswork or hand composition may be had for an additional fee. Interested persons may secure further information by getting in touch with Supervisor Brewington at the address given above.

Mr. Brewington also states: "We are striving to meet some of the urgent demands of small newspapers and job shops. In addition to this special course, the regular facilities of the school are available to any printer who may wish to take a refresher course of from one to eighteen weeks."

HAVE YOU?

Don't forget the existence of WPB's Obsolete Printing Plate Order M-99, in which it is stipulated that all obsolete printing plates containing restricted metals shall be disposed of quarterly.

If you remember, printing plates become obsolete if, on July 1, 1942, or on the first day of any calendar quarter thereafter, it has been in existence for the period specified below and has not been used during such period:

Newspaper printing, 1 year

Magazine and periodical printing, 1 year

Book printing, 4 years

Container printing, 1 year

All other categories of printing 2½ years

In Obsolete Plate Order M-99, "restricted metal" means aluminum, antimony, chromium, copper, lead, nickel, tin, zinc, or any alloy thereof. However, plates composed only of lead, tin and antimony are excepted by the order.

Every Offset-Lith Image Needs Careful Handling

By ADAM HENRI REISER

THE offset-lith image is always vulnerable. This is especially true during press work. Letterpress printing surfaces may be impaired by batters, over-pressure, by the paper used in printing, and even by the ink used in printing. All this applies to offset-lith printing surfaces also. In addition, there exists the chemical action of the dampening solution employed, and the abrasive action of the friction caused by dampening and inking rollers as well as the blanket.

Aside from these elements of wear and injury, however, there is present another insidious force that may be responsible when the life of the press plate image is shortened. This force operates in the period bounded by the time the press plate arrives at the press, and the time when the final OK is given the pressman. This is sometimes referred to as the crucial period. It is a most critical one in the life of the press plate image, for it is during this period that the image ages prematurely or receives the basis for a long healthy existence.

Asphaltum for Security

What happens during this period that can be so harmful? Well, let's see. In those establishments where the plate goes to the pressroom with the original coating of developing ink on the image, the pressman is furnished with a springboard for trouble. So-called speed merchants clamp these plates right on the press, drop the dampeners and inkers, get their lay, wash the image out straight, sometimes more than once to get all the hard ink off the plate, and then roll ahead for color OK. In that manner they get quick starts but often much quicker stops. Unquestionably, the image has been deprived of much of its acid-resisting powers. It is hard to estimate just how much of the fatty acid necessary to a good ink-receptive base may have been removed by this drastic washout.

From the standpoint of security it is important that asphaltum be gotten on the image before the dampeners are dropped. Asphaltum, of course, is the acid-resisting coating on the image. Yes, it should also be applied over the lacquer coating of the deep-etch plate. Even though developing ink with its greasy ingredients is said to perform a similar function to that of asphaltum, the fact that developing ink hardens and rejects the fresh press ink, permits a certain amount of wear to set in upon the image, for the action of the dampeners rolling over the hardened ink during the makeready period sets the stage for undermining the work at the very outset.

Another source of trouble during this starting-up period is found in a heavy-printing image. To reduce its strength, the pressman resorts to the straight wash-out. That is, he washes the plate out with turpentine and water to get right at the base of the image. Upon thoroughly removing all the ink a light rub-up is given the plate with the ink used in running the job. Sometimes, however, the rub-up is omitted, the plate being just washed out straight, after which the dampeners are rolled over it, to be followed a few revolutions later by the inkers. While this procedure is not so harmful when clean water is used throughout, with dampeners and fountain solution free of acid as well, it is fruitful of dire consequences when the dampening system has become saturated with the dope used in a previous run, and these dampeners are permitted to roll over a plate with its bare, washed-out image for even a short time. Even when the lacquer-based image of the deep-etched plate is subjected to this procedure there is danger, for it has been reliably reported that lacquer absorbs moisture. If the image prints heavy, a sensible procedure from the standpoint of plate security lies in running waste sheets to pull the work out sharp. Stiffening up the ink may aid.

By far the best practice to follow when any press plate prints a questionable sheet is that of pulling the plate off the press and putting a hand roller to it. Not only will that settle any controversy on the quality of the work, but it will also go a long way to preserve it besides getting it to the desired condition. Another etch will often work wonders following the roll-up and the press product from the plate then invariably excel the first attempt from the same plate. Of course, if the work is excessively full, the best thing to do is to make it over at once.

Recommended Procedure

In any shop where plate troubles persist, the following procedure is strongly recommended. Rolling up the press plate before it is sent to the press will reveal any defects or imperfections resulting from platemaking operations. Excessive scouring of the albumin image with ammonia or soda solution, strong counter-etching or even strong etching at the finish (if the protective coating of developing ink is weak) among other things, will show up in a weak image during this rolling-up operation. Too vigorous scrubbing or other faulty ma-

Effective Printing Ink Economy

By HERBERT KAUFMAN*

*General Printing Ink Corporation, New York, N. Y.

OBVIOUSLY, every manufacturer of printing inks and other supplies in the Graphic Arts is making all-out efforts to keep his customers' presses rolling. The Eagle Printing Ink Company's Color Research Laboratory has directed its efforts toward suggestions which might effect economies in the use of printing inks. After quizzing our technical experts we have compiled the following data:

Oftentimes savings in scarce materials can be made if the printer will cooperate with the manufacturer to the extent of giving as complete information as possible with regard to the properties of the ink desired; whether or not it should have any special fastness properties, that is, light, alkali, etc.

A considerable amount of ink often can be saved in the pressroom by showing particular care in covering all partially used cans or kits when not in use to minimize the amount of skin. If the ink is carefully leveled in the can and an oil paper placed in intimate contact with the whole surface there is little chance of skin forming.

Sooner or later there will probably be a shortage of tin plate and consequently a scarcity of tin cans, and the printer can cooperate with the manufacturer by ordering his inks in the largest possible containers so that the available supply will go farther.

The mileage, or number of impressions per pound, of printing inks depends upon the nature of the pigments used to obtain the specific requirements of the jobs. If the requirements call for opaque inks, the coverage will naturally be less than those of a transparent color, and again where there are limitations in the use of specific colors such as alcohol proof, alkali proof, etc., the colors that can be used are of a limited variety.

The pressman can, however, increase the mileage of a given ink by careful, even makeready, proper setting of the rollers, and most important, an even setting of the fountain. The fountain should be set to about six teeth on a fountain equipped with a ten tooth swing. This allows either the additional flow of extra teeth or the reduction in the flow without frequently adjusting the keys of the fountain. Aside from the additional mileage obtained, the printed job will appear much cleaner and the danger of offset and sticking will be minimized.

nipulation in any of the other stages of the deep-etching or positive-reversal operations will also show in a similar way. It is significant that the image may be affected even though it looks good when it reaches the press, if the plate has not been rolled up. However, when the plate has been rolled up in the finishing room before arrival at the press, the greatest assurance can be felt of its satisfactory start.

Arriving at the pressroom fully washed out under asphaltum, the plate is gauged with a micrometer by the pressman. He then starts his bevels on both clamping edges, and after placing the proper packing against the underside of the plate, clamps it on the press.

Considerable lost motion can be omitted by the inclusion of lay marks on every plate. One mark designates the center of the plate at the gripper edge, while two lines are positioned parallel to the gripper edge, but back from it a given pre-determined distance, and extended to both sides. When the plate is clamped to the plate cylinder, the front marks on the plate are laid to coincide exactly with companion marks on the plate cylinder. Needless shifting is eliminated by this stunt. When the plate is clamped in position and pulled tight, the inkers are dropped on the dry plate. Lifting them off the plate again, the plate is inched around, and the roller setting examined in the four parallel streaks of color left on the plate by the form rollers dropping on it. Uniform width of the streaks across the plate testify to an even setting along the length of the roller. If the streaks are broader than ¼ in., the setting should be checked with paper strips and a feeler. The last roller off is usually set a bit lighter than the others, and therefore has a lighter streak. Satisfied with the setting, the press is started, and the inkers kept on until a solid film of color appears on the plate. Dropping the dampeners after lifting the inkers while the press is in motion will gradually remove this film, leaving the work inked.

Objection may be offered to this procedure on the basis that the dampeners will collect this ink film, dirty dampeners resulting. Ink-covered dampeners greatly reduce the efficiency of the dampening motion. However, if the ink film on the plate is light in strength even though the work is all covered, little harm results from its removal by the dampeners. Great security is offered the image by virtue of its being covered with ink prior to any contact with the dampeners. Removal of the solid film may be accomplished easily in another way. Inching the press, the plate is washed with a sponge saturated with gum. The gum is then fully removed from the plate with a water sponge after which the press is run with the dampeners down followed in turn by the rollers.

Everything else being equal, greater freedom from trouble is assured when the above insurance procedure is used in handling plates during and prior to the so-called "crucial period" under discussion. Some of the image vulnerability is then avoided.

Plastic Printing Element Processes Not Yet Commercially Practicable

GRAPE-VINE rumors have been passing about the country recently with respect to the development of processes whereby plastics can be utilized as substitutes for the present printing elements. Interest, no doubt, is high in the proposed use of plastics for making type, line-composing machine slugs and photo-engraved plates because of the fear on the part of executives in the printing industry that the usual metals from which these elements are now made will not be available in the present emergency. Interest may also be heightened in the use of plastics for these purposes because of the many wonderful new applications for plastics in general manufacturing and for war purposes which have been reported recently in many publications throughout the country. Further needed developmental work probably will be subject to war exigencies.

No Development Work on Nylon Type

TO those who have been seeking further information about the manufacture of Nylon type and Nylon printing plates in response to the story which originally appeared in the New York *Times* some time ago, it is stated by an executive of E. I. du Pont de Nemours & Company that there has been very little, if any, development work on the use of Nylon for printing type and printing plates in this country. Nylon is not commercially available at the present time except on high priority, since all of it is used for war purposes.

Our patent reporters, Invention, Inc., included a brief description of the patent, No. 2,282,448, in the July 1942 issue of *Printing Equipment Engineer*. Inventors are Hans Beck and Walther Kuehne of Germany. The patent was assigned by mesne assignments to E. I. du Pont de Nemours & Company of Wilmington, Del. The invention relates to printing plates and other units made from superpolyamides. Four claims are incorporated in the patent. These are as follows: (1) A printing form composed essentially of a superpolyamide; (2) A printing form composed essentially of polymeric hexamethylene adipamide; (3) A printing letter type composed essentially of a superpolyamide, and (4) A printing letter type composed essentially of polymeric hexamethylene adipamide.

Substitution of Plastic to Replace Metal in a Slug

AT the Grand Rapids convention of the International Craftsmen's Association (August 1942) some discussion arose during the Typographic Clinic about the casting of slugs in line-composing machines from plastic materials instead of the usual lead-tin-antimony alloy. It seems that one experimenter had gone so far as to actually cast slugs experimentally by using a plastic composition obtained from Dow Chemical Company. Nothing further has been heard about the idea until just recently.

In the *Report on War Product Research* undertaken by Products Engineer M. E. Powers for the Graphic Arts Association of Illinois in collaboration with the War Conversion Committee selected from among members of the Association, some discussion is presented on the *Substitution of Plastic to Replace the Metal in a Slug*, as follows:

"There has been discussion from time to time of the possible substitution of plastic for the metal now used in slug casting machines and in material machines. Plastics that may be heated up so that they are liquid enough to be used in the machines now in use require so long a time to cool and solidify that they are impractical. Other disadvantages are also found in these very liquid plastics.

"There has been some experimenting with the idea of using an injection molding device in connection with the casting mechanism of the machines but the high pressure required for injection molding prevents its use. It is obvious that present construction of the machine and the locking devices for the matrix will not stand the 5000 or 6000 lbs. pressure required for plastic molding of the slugs.

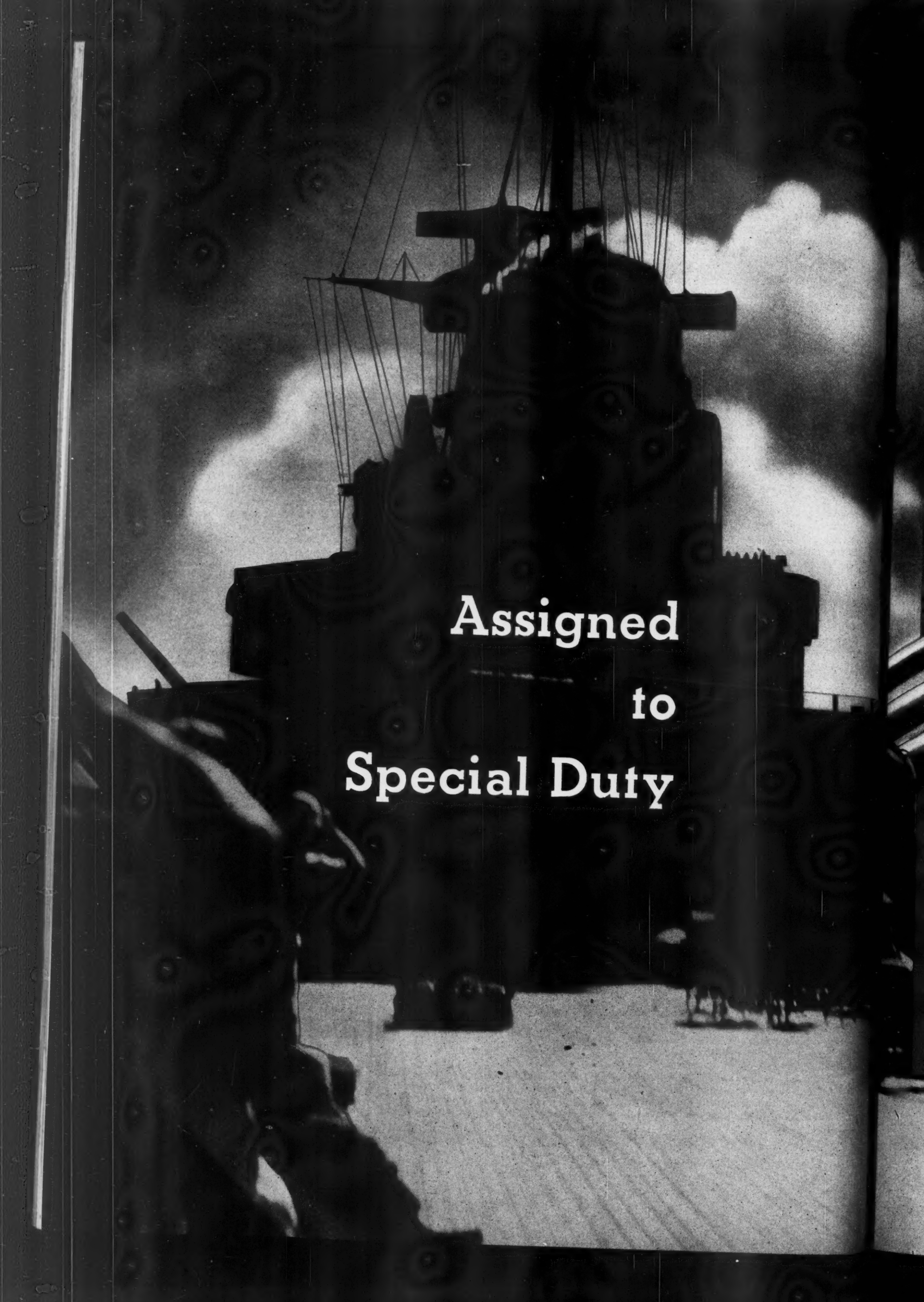
"The future may reveal a plastic that can be used for slug casting but the present outlook is not very promising."

Use of Plastics for Engravings

SOME reports have been circulated that a process has been developed whereby plastic plates can be etched as substitutes for copper and zinc photo-engraving. Like many reports about radically new processes, the impression has been received by some executives that plastic engraved plates are ready for the market.

Again referring to the *Report on War Product Research*, Mr. Powers comments as follows:

"Some of the experiments in the engraving of plastics show promise while the majority are of a very low quality product. Assuming that the present method of making an engraving is proper for plastics, it would seem that the difficulty experimenters are facing is that available solvents do not act on plastics in the same way that acids etch metals. There is little or no control of the solvent action and ragged edges are apparent in all samples. New methods of processing plastics are being announced daily and it may be that some means will be discovered to make a screened printing plate from plastic material. The problem is still in the hands of the experimenters."



Assigned to Special Duty

It is in times of great national emergency that every American drops what he is doing and takes his assigned place in the ranks of the forces which guard the safety, the inviolability not only of the shores of this country but of the rights and the privileges that make it a country worth fighting for. This is his payment in return for the privilege of being an American citizen.

Some are not called to fight. Some must serve in the equally vital task of producing arms for America's fighting forces. Others play an equally important role in maintaining the basic civilian economic and social structure which cannot be permitted to collapse if the nation is to be a highly efficient fighting machine. To each is given responsibility in the measure of his capacity. This is as true of corporations as it is of individuals.

The Miehle organization with its known resources for precision machine manufacture was "called to the colors" early. Long before Pearl Harbor, Miehle was manufacturing large quantities of naval ordnance. In fact, it is one of the first fourteen American concerns to be awarded the famous Navy "E" for "outstanding performance in the production of naval ordnance matériel." Today, Miehle is working 24 hours a day, seven days a week in the war effort.

Thus assigned to special duty, Miehle doubts that there will be any new Miehle presses made until the war is over, peace is won, and we can all go back to our peaceful pursuits. Until that time, Miehle asks—and has been given—the understanding sympathy and cooperation of all its printer friends. We will maintain, as long as we are permitted to do so, our staff of field machinists and repair parts services so that your present Miehle presses can be kept at their usual high efficiency.

The main thing is to *win this war.* To that end no sacrifice is too great.

MIEHLE PRINTING PRESS & MFG. CO., Chicago, Illinois

Official U. S. Navy Photograph

To Live Long But Not Be Old...

Such is man's aim—to be measured by accomplishments and not in years.

A salute to those veterans of the composing-room who have been held or brought back into active production by world conditions. The urge is on them to contribute of their training and experience that younger hands be released to the service of the nation's armed forces.

Equipment, too, must be kept from being old, that it can surely perform its daily and nightly task for the duration. . . . To the health of men and machines—*Linotype!*

★ TRADE LINOTYPE MARK ★

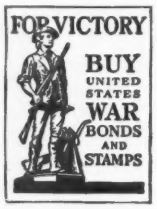
Linotype Bookman with Garamond Bold No. 3 Italic

ARMY E NAVY

Not less important than the official recognition of Linotype workers for war production is the commendation of the publishers and printers for Linotype's war-time cooperation with the Press.

Making available necessary repair and maintenance parts and supplies; furnishing new Linotypes when properly authorized under regulations; rendering counsel and service to the composing-rooms through its Linotype Production and Service Engineers; publishing the Linotype Life Extension series of maintenance booklets—vital to the proper upkeep of composing machines.

With an organization continually attuned to the needs of the Press, service has become a tradition of which Linotype is proud.



PRINTING PATENTS REPORT

Covering patents issued November 24, December 1, December 8, December 15, December 22.

This data is compiled exclusively for *Printing Equipment Engineer* by Invention, Inc., is verified in the United States Patent Office, and is comprehensive of all patents in the field of each heading for the dates specified.

For copies of patents listed here, specify the patent numbers and send 10c each (stamps not accepted) to the Commissioner of Patents, Washington, D. C.

Binding, Cutting, Perforating:

2,304,629. MACHINE FOR FORMING PLASTIC BINDINGS from a flat comb-shaped blank of thermoplastic material, such as Celluloid, into the commonly known shape of rings extending from a longitudinal back. The back formed by the present machine is caught in a longitudinal groove of the form arbor so that it is caused to lie in a plane intersecting the rings instead of tangent to them. Form arbors of different sizes and shapes may be substituted. The binding material blank is formed by a tight band of cloth which serves to wrap the blank around, and into the shape of, the arbor. Invented by Charles E. Emmer, Chicago, Ill. Assigned to General Binding Corp., Chicago, Ill. Application April 3, 1939. 11 claims.

2,304,630. MACHINE FOR OPENING PLASTIC BINDINGS for the insertion of pages. A mandrel, operated by a foot pedal, slides horizontally in and out of plastic bindings held in the machine. The mandrel is tapered at its end to permit entering and spreading the rings and, further, to allow the rings to curve back into closed form one at a time so that pages may be manipulated to guide the end of each ring into its aperture in the pages. A ring spacer in the machine has grooves corresponding with the rings of the binder, thereby to hold the opened rings in exactly true position for entering page apertures. Invented by Charles E. Emmer, Chicago, Ill. Assigned to General Binding Corp., Chicago, Ill. Application November 18, 1939. 9 claims.

2,304,918. VARIATION IN SADDLE STITCHING to bind pages into a relatively thick book which has the flat back advantage of side stitching, plus low cost, plus enabling the pages to be opened flat as with customary saddle stitching. The new binding calls for sheets to be creased to provide two parallel fold lines on all but the inner signature. Progressing outward, these fold lines define back portions of increasing widths as shown in U. S. patents 657,503 and 2,066,620, so that each sheet or signature makes two right angle turns to surround inner sheets or signatures. Thereafter instead of stitching once through the back, stitching is done in two rows, both rows originating in the one fold of the innermost sheet and from there diverging through the two parallel folds of other sheets to the parallel folds of the outermost sheet which constitute the two edges of the book back. Invented by Allen Hofrichter, Suffern, N. Y. Unassigned. Application April 14, 1942. 4 claims.

2,305,735. PAPERCUTTING MACHINE with a novel clamp actuating mechanism for bringing the clamp into engagement with, and applying pressure to, a properly positioned pile of paper. The new mechanism is automatically operative in timed relation to the fall of the knife. It is said to be positive in its action without entailing undue shock to the mechanism or objectionable noise, both disadvantages being attributed to previous means using simple pawl and ratchet. Further, the new pressure means is made operative by friction plates when desired but, through a free-wheeling arrangement, the clamp can move at a speed greater than the speed of operation of the friction box. Invented by William M. Reichart, Cleveland, and Rudolph J. Vanek, Maple Heights, Ohio. Assigned to The Chandler & Price Company, Cleveland, Ohio. Application September 14, 1940. 2 claims.

Composing Room Equipment:

2,303,635. DEVICE FOR FEEDING AND ALIGNING punched or perforated strips through machines using such strips, for example motion picture machines, tabulators, looms, instruments with movable charts, etc., and including type casting machines using tape motivators. Instead of engaging the series of perforations in a strip by means of pins projecting from a wheel or belt, as heretofore, the present invention engages the perforations by means of a rotating helix threaded through the perforations and thereby acting in the manner of a worm gear to advance the strip. Invented by Robert E. Hart, Poughkeepsie, N. Y. Assigned by mesne assignments to American Lithofold Corp., St. Louis, Mo. Application November 27, 1940. 16 claims.

2,306,009. LOCKUP CHASE which includes a rectangular frame, preferably of iron, having numbered teeth on its inner sides so that opposite teeth carry like numbers. Two vertical bars and two horizontal bars are of length corresponding to the inside dimensions of the frame and these bars have teeth on their ends which cooperate with the teeth in the frame. Thus the bars may be placed within the frame at any desired location to create a selected rectangle which comprises the area enclosed by the bars and which acts as the chase-proper to hold the type. The bars themselves are of adjustable width. The width of each is adjustable by a key which cooperates with gear teeth to slide two parts bearing wedge-shaped pieces along each other, thus compressing the type within the chase. End "fish" plates swing over the teeth in the frame to hold the bars within the frame during the printing process. Invented by William G. Bradshaw, Saratoga Springs, N.Y. Unassigned. Application December 24, 1941. 1 claim.

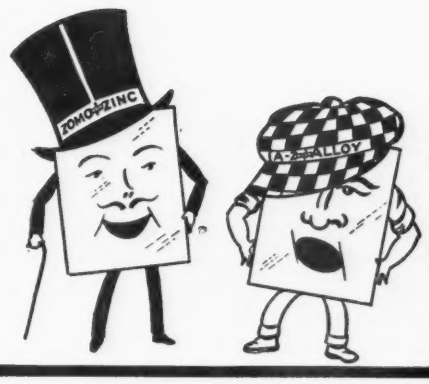
Feeding, Folding, Delivery:

2,303,681. SHEET GAUGING AND SORTING MECHANISM designed for use particularly with tin plate but said to be adapted to handle any sheet material to be sorted in accordance with varying thicknesses of the sheets. Gauging is accomplished by four parallel rollers, one above the other, the middle two being free floating so that each may be raised to cause frictional drive of the roller next above. The bottom two rollers are power driven. A sheet passed between them will, alternatively according to its thickness, cause neither or one, or both of the upper two rollers to rotate by friction resulting from raising of the floating rollers. Power from the upper rollers operates deflectors for sorting the sheets. Invented by Dario Buccicone, Gary, Ind. Unassigned. Application April 17, 1941. 3 claims.

2,304,172. MEANS FOR WITHDRAWING LOWERMOST SHEETS FROM STACKS, as employed in connection with envelope machines or other mechanisms for performing various operations on a sheet. The stack-supporting plate is of a smaller size than the stack so that the underside of the lowermost sheet is exposed at both its leading and trailing edges. A sucker at each of these edges periodically swings upward, grips the lowermost sheet and pulls its leading and trailing edges downward. At the leading edge the sheet is caught between a roller and a rotating segment which frictionally withdraw it, and at the trailing edge a forked gripper moves upward to

(*Continued on Next Page*)

Resolved to continue to provide the finest of metals for MODERN ENGRAVING NEEDS . . . to cooperate with governmental authorities in all efforts to conserve metal and to aid the war effort.



The ATLANTIC ZINC WORKS

"Stupendous Task Lies Ahead"

IN a year-end interview, Joseph T. Mackey, president of the Linotype Company, stated that "Linotype's peacetime manufacturing operations, employing several thousand men and women, have been almost 100% converted to the war program, with increased facilities and numbers of employees.

"The confidential nature of the work," he continued, in part, "prevents description of the product, except to say that it comprises optical instruments for fire control and similar purposes, the manufacture of which involves the highest degree of precision.

"While the war program has been by far the outstanding accomplishment in 1942, government regulations have permitted continued service to printers and publishers so that the essential uses of the power of print may be carried on unimpaired. Under government limitations, parts and supplies and occasional machines may be furnished on a replacement basis. Our facilities for such service have not been impaired by the much larger volume of our manufacture for war purposes.

"As to 1943, we live in the present, but all of us plan and work for the future. Yet no one can foretell what the exact conditions may be when peace is again with us. We do know that the most stupendous task of all time lies ahead, during the period of reconstruction, and we must be thinking of this as we now work to win the greatest of all wars."

hold the next to the bottom sheet in place against unwanted movement which might result from friction with the lowermost sheet being withdrawn. Invented by Vincent E. Heywood and George A. Anderson, Worcester, Mass. Assigned to United States Envelope Company, Springfield, Mass. Application March 12, 1940. 4 claims.

2,304,855. MATERIAL HANDLING APPARATUS intended primarily as a sheet feeder for a printing press but said not to be limited to this use. It consists of a "roll-away" type feeder mounted separately from the press. The feed board extends downwardly at a small angle from the horizontal in the usual manner; however it is not hinged to the feeder body but, instead, is fixed rigidly. When the feeder is moved toward and away from the press a cam and follower means on the feeder and press tilt the entire feeder transversely so that the lowest extremity of the feeder board clears the top of the press cylinder without striking it. Invented by Joseph Sinkovitz, Pittsburgh, Pa. Assigned to Miller Printing Machinery Co., Pittsburgh, Pa. Application June 30, 1941. 40 claims.

2,305,536. SLITTER AND REWINDER of the type in which paper from one roll or other source is slit longitudinally and the sections of paper web are rewound to form separate rolls. Present invention reduces the manipulative operations necessary to prepare for a new run. A single lever handle at one side of the machine suffices simultaneously to lock or unlock all the parts carrying the movable knife-set at opposite sides of the machine. Thus, so an uncut web may be quickly threaded, the knives may be separated after first being drawn laterally out of engagement with each other to relieve spring tension and prevent the cutting edges from destructively snapping across each other. Invented by Bryant W. Langston, Woodbury, N. J., and Karl Sieg, Philadelphia, Pa. Assigned to Samuel M. Langston Co., a corporation of New Jersey. Application August 4, 1942. 22 claims.

2,306,248. WEB CUTTING AND FOLDING MECHANISM for use in connection with a rotary printing machine such as used in magazine production. In the present invention components of a common cutting mechanism and a common folding mechanism are adjustable to cut and fold sheets of different sizes. Thereby the same printing cylinder which can produce large products can also be used to produce a greater number of small products which will be cut into their smaller sizes as fast as they are printed and also folded at the faster speed necessary for the smaller sizes. High speed is not sacrificed as with variable size sheet mechanisms, and extra sets of alternately operable cylinders are made unnecessary. Invented by Adolph M. Zuckerman, New York, N. Y., and Herman P. Clauberg, Hasbrouck Heights, N. J. Assigned to R. Hoe & Co., Inc., New York, N. Y. Application November 19, 1941. 20 claims.

Miscellaneous:

2,302,753. METHOD OF PRINTING TEXTILES with alkaline salts of sulphuric acid esters of leuco vat dyestuffs which of themselves are insufficiently soluble in water and are therefore difficult or impossible to print. Printing is accomplished by adding to the printing paste some salts of di-or-triethanolamine with inorganic acids, especially strong acids such as hydrochloric acid, sulphuric acid, etc., thereby producing good and even prints. Invented by Jacques Duport, Basel, Switzerland. Assigned to Durand & Huguenin S. A., Basel, Switzerland. Application October 28, 1940. 15 claims.

2,302,855. ROTARY CUTTING MACHINE designed to cut sections of material from a moving web as, for instance, to make the apertures for the windows of window envelopes. The web is passed around a roll turning with the same speed as an under roll which carries a cutting member. The excised portion of web is then drawn away by a suction pump. Invented by Harold E. Hallman, Catonsville, Md. Unassigned. Application December 6, 1939. 8 claims.

2,303,370. METHOD OF PREPARING NEW POLYALKYLOL KETONES and their derivatives, especially one referred to as "Ketanol" by a process involving the inter-action of formaldehyde or para-formaldehyde with acetone. Products of the invention may be used to plasticize glue or gelatin in making printers' rolls or in the making of the binder used in book binding. In copying inks, "Ketanol" is useful as a solvent for the dyes and keeps them from drying out too fast. Invented by Joseph H. Kugler, Howard C. Brinker, and Robert J. McCubbin, St. Paul, Minn. Assigned to Minnesota Mining & Mfg. Co., St. Paul, Minn. Application May 6, 1939. 7 claims.

2,303,551. METHOD OF LOWERING THE FREEZING POINT OF CYCLOHEXANOL so that it will not solidify during storage, shipment and use in cold weather, by the addition of low alkyl substituted cyclohexanols to the hexanol. For example, a solvent blend of 90.2 % of cyclohexanol and 9.8 % methyl cyclohexanol has a freezing point of -16° C compared with +25° C for pure cyclohexanol. The new product has the same solvent properties as the original cyclohexanol, e.g. in the manufacture of printing inks. Invented by Augustus S. Houghton, Riverdale, N. J. Assigned by mesne assignments to Allied Chemical & Dye Corp., New York, N. Y. Application September 18, 1940. 5 claims.

2,304,729. NEW RESINOUS PRODUCTS, prepared by heating the anhydride of a polycarboxylic acid, e.g. phthalic anhydride with a tertiary aminomethyl-phenol of the type described in patent 2,098,869, e.g. 2-hydroxybenzyl-N-dimethyl-amine or a carboxylic acid salt or ester thereof. Products of the invention resemble shellac and may be used in the preparation of spirit varnishes, inks, etc. Invented by Herman A. Bruson, Philadelphia, Pa. Assigned to The Resinous Products & Chemical Co., Philadelphia, Pa. Application January 4, 1940. 17 claims.

2,305,088. PROCESS OF OBTAINING PIGMENTS having improved fineness of particle size, homogeneity and freedom from by-products and suitable for plastics, textile printing, inks and like fields. A water-insoluble organic pigment such as a vat, phthalocyanine or azo pigment is first dissolved in a solvent, e.g. concentrated sulfuric acid. A substrate which is partiallyortotally soluble in the solvent, e.g. barium sulfate, is added and the resultant dispersion is drowned in water to effect simultaneous precipitation of the color and substrate. The precipitated color is then washed, filtered and dried. Invented by Roy H. Kienle, Bound Brook, and William D.Gerdsen, Plainfield, N. J. Assigned by mesne assignments to American Cyanamid Co., New York, N. Y. Application November 22, 1938. 10 claims.

2,305,098. PROTECTIVE PAPER FOR CHECKS and similar instruments printed on its surface with a special ink which changes color when alterations of the check are attempted by the use of water, ink eradicator or other bleaching agents. An example of such an ink comprises 86= of a vehicle of white corn Dextrine mixed with water, glycerine, and phenol and 14% coloring material consisting of 2.9 % Patent Blue (dye), 9.6 % Lithol Rubine Red (pigment) and 1.4% Hansa Yellow (pigment). Invented by Festus L. Minnear, Lombard, Ill. Assigned to Columbian Bank Note Co., Chicago, Ill. Application July 15, 1940. 3 claims.

2,305,401. PROCESS FOR THE PRODUCTION OF A SULFURIZED PRODUCT comprising hydrolyzing a naphtha acid sludge to obtain an oily layer and an aqueous layer, recovering the oily layer and chlorinating it to a chlorine content of about 10-30 % by weight, reacting the chlorinated product with a reactive sulfur compound such as sodium polysulfide, and recovering the resulting sulfur-containing condensation product. The sulfurized products are useful in textile oils, ink oils, etc., either alone or with other oils. Invented by Bradshaw F. Armendt, Baytown, Tex. Assigned to Standard Oil Development Co., Elizabeth, N. J. Application September 14, 1940. 6 claims.

2,306,019. DRYING APPARATUS through which sheets or webs of paper or cloth pass and are dried by circulating heated air. A blower and air heater is located on the casing of an insulated box-like chamber. A moving web enters through a small aperture at one end and leaves through a small aperture at the other. Hot air is forced down toward the web from the blower. Directly over the web a series of slot-like nozzles extending crosswise the web spread the air, and plates suspended close to the web at right angles serve to scrape off the air which normally tends to cling due to surface tension. The air is drawn out through a double wall arrangement on either side within the casing and most of it is returned to the blower and heater. Some used air is allowed to escape through an exhaust vent and is replaced with fresh air through a damper. However very little of the drying air escapes into the room. Invented by Milton E. Hanson, Haddonfield, N. J. Assigned to B. F. Sturtevant Co., Boston, Mass. Application October 21, 1939. 3 claims.

2,306,281. METHOD OF PREPARING FATTY OIL PRODUCTS by reacting an unsaturated glyceride oil such as raw linseed oil with maleic anhydride in the presence of an acid such as sulphuric acid, oxalic acid, etc. as a catalyst under non-resinifying conditions, the degree of reaction being controlled to yield soft sticky solids by correlation of reaction time with the temperature of reaction to produce a product capable of being esterified. Products of the invention may be reacted with polyhydric alcohols to yield thickened products useful in varnishes, printing inks, etc. Invented by John B. Rust, West Orange, N. J. Assigned to Ellis-Foster Co., a corporation of New Jersey. Application September 12, 1938. 5 claims.

Plate Making:

2,302,669. PHOTO - LITHOGRAPHIC PRINTING PLATE characterized by having its printing image area based on a film of metal oxide substantially integral with the grained surface of the plate, instead of on a film of albumin dichromate merely adhering to its surface. The oxide image, in contrast to the usual albumin dichromate image, is said to be less easily damaged and to stand up under longer runs. A grained, stainless chromium-steel sheet is coated with oxides by immersing in the following solution heated to 180°-220° F. Percentages are by weight.

Water	35-55%
Free sulphuric acid (1.84 sp. gr.)	15-55%
Chromium, vanadic, metavanadic, manganic or permanganic acid	2-20%
Iron sulfate	0.01-10%
Chromium sulfate	0.01-10%
Other sulfates or bisulfates or impurities	Balance

The sulfates are added to the solution to color the oxides. This pre-grained, pre-colored plate can be supplied the printer who can print an image thereon in one of the usual ways. Except where the image is of a "high resin" or "varnish" ink, a resist of powdered asphalt topped with powdered French chalk is applied and fused to the image with heat. Finally all the remaining exposed oxides are stripped off by electrolytic treatment to leave either the grained surface of the steel or a deep-etched background. Invented by Clements Batcheller, Glens Falls, N. Y. Unassigned. Application June 6, 1941. 7 claims.

2,302,816. PLANOGRAPHIC PRINTING PLATE having a non-printing area of a hydrophilic material plus a hygroscopic substance such as glycerine, phosphoric acid, or the like. The hydrophilic material is first applied to the entire plate and is a vinyl resin as disclosed in patent 2,230,981, February 4, 1941, of the present inventors Printing portions are prepared by conventional albumin process. Thereafter hot water is used to somewhat plasticize the hydrophilic material in the non-printing area and the hygroscopic material is coated on. To prevent objectionable swelling a finely divided clay-like material, such as calcium carbonate, and a chemical reagent, such as ammonium bichromate, is also used in the non-printing area. The new plate is said to permit use of fine screens of from 150 mesh to 300 mesh, or to permit continuous tone printing, without loss of detail. Invented by William Craig Toland and Ellis Bassist, Brookline, Mass. Assigned to William Craig Toland, trustee. Application January 11, 1941. 2 claims.

2,302,817. PLANOGRAPHIC PRINTING PLATE which uses polyvinyl alcohol as a substitute for a colloid printing coating, as previously disclosed but which employs a special type of polyvinyl alcohol which will not disintegrate even to a very slight extent. Formerly such disintegration allowed small amounts of moisture to get in and repel greasy ink, thus resulting in unsatisfactory printing. Present invention extracts the cold-water-soluble fraction in a family or mixture of polymers of polyvinyl alcohol to leave a product adapted to form a coating more nearly impervious to cold water. Invented by William Craig Toland, Brookline, Mass., and Benjamin B. Burbank, Brunswick, Maine. Assigned to William Craig Toland, trustee. Application July 2, 1941. 8 claims.

2,304,112. METHOD OF PREPARING 2-METHYL-4-THIENYLTHIAZOLE, which is useful in preparing dyes which have sensitizing properties in photographic emulsions, by reacting methyl-thienyl ketone with bro-

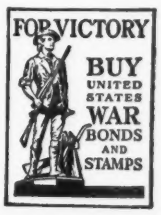
(*Continued on Page 28*)

It Takes a Lot of Printing to Run a War!

The armed forces, government agencies and prime contractors must have official forms, bulletins, labels, and questionnaire blanks to conduct the business of winning the war . . . the people need newspapers and magazines to keep them informed . . . the war industries require trade journals, literature, and books to disseminate technical information.

It's all essential—all vital to Victory . . . and it gives printing an important part in the war—a job to be done with speed and efficiency.

No matter what **your** part may be, make sure that your equipment is kept in the best possible condition—clean . . . well lubricated . . . and properly adjusted. **Our** part is to help you keep your plant mechanically fit for wartime duty . . . and we are prepared to furnish needed replacement parts and essential equipment, up to the limits of emergency regulations.



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LET'S BE CAUTIOUS

It is being said that the year 1943 may be the "toughest" year of the war. We believe that this applies not only to our battle fronts in foreign lands but to the home fronts as well. Yes, and it applies to the production of printing. We believe there will be many tough production problems presented to printing mechanical and production executives during 1943. No one is certain just what these problems will be. No one can say what restrictions and shortages will come about. To guard against future troubles every newspaper production or mechanical executive should exert the utmost caution in regards to his equipment and supplies. As applied to type metal, this means that you should keep your metal in "fighting trim" at all times. You must treat it as if it were the last metal supply you would ever get. The best safeguard is to take advantage of the Imperial Type Metal and the Imperial Plus Plan. By so doing you are assured of the best type metal service that it is possible to obtain under war conditions.

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Suggestions for Metal Economy

THE Committee on Critical Metals of the Photo-engravers Board of Trade, New York, recently warned buyers of photo-engraving in metropolitan New York, by means of a bulletin, that it will be necessary for still closer cooperation to be exhibited on the part of all Graphic Arts Industries. After describing the WPB restrictions on copper and zinc, the committee makes a number of suggestions to buyers, all of which will help conserve engraving metals:

(1) Closing dates of all periodicals should be anticipated. Advance all mechanical production schedules.

(2) Rush work wastes metal. No special rush plates can be put through hereafter unless such jobs can be at once combined with other work, thereby using every last square inch of each flat of zinc or copper.

(3) Bearer metal must be held to a minimum.

(4) All mortise spaces must be utilized to accommodate other small plates of like character.

(5) Extra large plates unnecessarily use precious metal and must be eliminated wherever possible.

(6) Care must be exercised in the *designing* of color work to minimize the waste of metals in non-printing areas. Color spots (widely separated) must be discouraged or so used that they can be made effective as small separate plates. This is a challenge to the skill of the designer.

(7) Double the usual allotted time for production and it will not be too great under present conditions. Give more time when possible.

(8) Do not expect "pickup" and delivery service to be maintained at the former service standards. Photo-engravers are subject to the draft—especially messengers—and the industry has a man-power problem, too.

mine, reacting the resulting product with thioacetamide and recovering the 2-methyl-4-thienylthiazole. The dyes produced from this compound are especially useful in emulsions for photo-lithography. Invented by Edmund B. Middleton, Woodbridge, N. J. Assigned by mesne assignments to E. I. du Pont de Nemours & Co., Wilmington, Del. Application March 20, 1941. 4 claims.

2,304,541. METHOD OF PREPARING A PLASTIC PHOTO OFFSET PRINTING PLATE which is said to be as satisfactory as a metal plate and which requires less steps in processing. The plate is made from material such as cellulose acetate or nitro-cellulose. One surface is roughened or dry grained and first treated with a weak solution of caustic soda and then with a weak solution of sulphuric acid. The surface is then adapted to carry a photographically impressed and inked image and selectively to accept moisture and grease. Invented by Thomas R. Caton, Valley Stream, Long Island, N. Y. Unassigned. Application September 24, 1942. 8 claims.

2,304,659. STEREOTYPE MAT HAVING IMPROVED PLASTICITY during molding whereby it is adapted to receive a deep, sharp and clear cut impression from the mold with a minimum of fracture in the face. It is said to give a large number of casts which are excellent reproductions of the pattern. These properties are imparted to the usual cellulose fiber mat by incorporating among the fibers 10-30% of a finely divided prctein such as milk casein. The mat is made on a paper making machine in the usual way, the protein and cellulose fibers being mixed and suspended in water and then formed into a sheet of the desired thickness. Invented by Arlie W. Schorger, Madison, Wis. Assigned to Burgess Cellulose Co., Freeport, Ill. Application October 17, 1940. 11 claims.

2,304,785. STEREOTYPE PLATE CASTING BOX in which hook-engaging insets may be positioned and temporarily attached to the core and within the casting chamber and then are cast permanently into the plate as the stereotype metal is poured and cools. These insets are of hard metal and are usable over and over, being recovered from the molten plate metal and again used in the casting chamber. In the plate they are imbedded in the head and tail portions and constitute female members that receive male member hooks on the press cylinder thereby to provide means for applying peripheral tension of the curved plate about the cylinder. Greater tension of the plate, without danger of breakage, deformation or strain, is said to be possible with use of these insets. Invented by Hobart N. Durham, Manhasset, N. Y. Assigned to The Goss Printing Press Co., Chicago, Ill. Continuation of application Serial No. 251,210, January 16, 1939. This application August 28, 1941. 3 claims.

2,304,838. PHOTOENGRAVING PROCESS for removing half-tone from highlight areas of a negative preliminary to producing a printing plate. Following the usual exposure of the negative to normal visible light through a half-tone pattern screen, a second exposure of the negative is made to infra-red or ultra-violet light. Due to the novel composition and pre-treatment of the drawing being photographed, the highlight areas are photographed in the second exposure to cover or efface the half-tone highlight dots of the first exposure without affecting the half-tone pattern in the work areas. This is made possible by preparing the drawing with a pencil containing Beta-methyl-umbelliferone, the markings of the pencil, when sprayed with an alkaline material, effectually absorbing ultra-violet light in a spread or "blotted" area greater than the area of the original pencil dot. Invented by Walter S. Marx, Jr., Park Ridge, Ill. Assigned to Printing Arts Research Labs., Inc., Chicago, Ill. Application January 4, 1940. 8 claims.

2,304,942. METHOD OF PREPARING COLOR PRINT PLATES particularly for producing color comic sections in multicolor but also for half-tone printing in color and for line printing in black. A black and white pen drawing is first photographed without a screen to produce a negative from which is prepared a line positive on transparent material such as glass or Celluloid. Next the surface of the line transparency is rendered receptive to coloring matter by treatment with a solution of water, egg albumen and ammonium hydroxide. Then transparent coloring materials are applied and color separation negatives made by transmitted light rather than reflected light. Invented by Walter S. Marx, Jr., Park Ridge, Ill. Assigned to Printing Arts Research Labs., Inc., Santa Barbara, Calif. Application November 16, 1939. 13 claims.

2,304,988. PHOTOMECHANICAL REPRODUCTION OF HALFTONE from a monochromous continuous tone record by means of a contact half-tone screen whose elements are colored and graded in density from their centers to their corners. Through such a screen, in contact with a photosensitive layer and with the tone record in printing relation, a filtered light is directed, the light being of a selected color differing from that of the screen elements in accordance with the contrast of the continuous tone record. Invented by John A. C. Yule, Rochester, N. Y. Assigned to Eastman Kodak Co., Rochester, N. Y. Application April 19, 1940. 31 claims.

2,305,338. MACHINE FOR CUTTING GROOVES across the backs of curved printing plates in predetermined relationship to the center registry marks on the faces of the plates. These grooves must be complementary to one or more of the grooves cut at equal distances apart along the form cylinder, parallel to its axis, and at the same time must be at varying distances from the registry marks on the plates in order to accommodate different sheet sizes, design spacings, etc. To facilitate cutting these grooves the present machine includes a slidable hollow saddle with a slot extending lengthwise of its crown. A circular saw projects through the slot to act upon the interior of the curved plate clamped to the saddle. Registry means permit locating the plate for grooving in the position desired. Invented by Howard M. Barber, Pawcatuck, Conn. Assigned to C. B. Cottrell & Sons Co., Westerly, R. I. Application November 13, 1941. 19 claims.

2,305,537. METHOD OF PRINTING MULTI-COLORED DESIGNS on strip material where the material is to be used in considerable lengths and not cut between repeated patterns. Object of the invention is to do away with the unprinted streaks or lines between repeated patterns inasmuch as these lines are obviously apparent when the material is not cut along the lines. A gap after each color impression results from the longitudinal space where the ends of a flexible printing plate join when the plate is wrapped around its drum. However the present method comprises placing the design on different color plates so that no two gaps coincide on the printed web and therefore there is no entirely unprinted line. Invented by Hampton Lee, White Plains, N. Y. Unassigned. Application April 16, 1941. 2 claims.

2,305,733. MATRIX DRYING MACHINE comprising a heat-insulated casing having in it a rotatable drum and an endless perforated band which passes around the drum. Through an aperture in the casing a matrix to be dried can be introduced between the run of the belt so as to be drawn into the nip between the belt and drum and drawn around thereby until it falls from between the belt and drum as the belt passes on its return run. The movement of the drum carries the matrix past heating elements preferably both inside and outside the drum, thereby uniformly drying the matrix. Invented by Cecil George Quick and Charles William Marshall, London, England. Assigned to R. Hoe & Co., Inc., New York, N. Y. Application April 27, 1939. 16 claims.

2,305,852. STEREOTYPE PRINTING PLATE particularly adapted for use on high speed rotary printing presses because its mass and consequently its centrifugal strain is reduced, its tensile strength is increased, and its means for holding on the cylinder is improved. This is accomplished by casting the stereotype metal in arcuate shape on the two sides of a thin, flexible sheet such as stainless steel. The flexible sheet is provided with perforations elongated circumferentially of the plate and thereby the inner and outer layers of stereotype metal are firmly attached. At the straight-edge ends of the plate the flexible sheet extends beyond the cast metal and is shaped to be easily gripped by clamping means. The arcuate printing plate may be made thinner and lighter owing to its reinforcing sheet. Invented by Hobart N. Durham, Manhasset, N. Y. Assigned to The Goss Printing Press Co., Chicago, Ill. Application November 29, 1939. 3 claims.

Printing Presses and Equipment:

2,302,942. METHOD OF MAKING A PAIR OF GEARS which enables a designer of machines to obtain practically any desired motion from the follower or driven-gear. The new procedure involves (a) the development of a "speedgraph" of the follower or driven-gear from data of the required non-uniform motion, (b) the development of pitch curves for both the driving and driven gears, (c) the making of master patterns in accordance with such pitch curves, and (d) the production of the driving and driven gears under the control of such dominant patterns or cams. Invented by Hyman E. Golber, Chicago, Ill. Assigned to Miehle Printing Press and Mfg. Co., Chicago, Ill. Original application June 7, 1939. Divided and this application December 22, 1939. 9 claims.

2,303,458. IMPROVED POWDER DISTRIBUTING APPARATUS of the type used in printing and lithography for spraying powder onto the freshly inked sheets prior to stacking, to prevent offset. The apparatus comprises a powder container, an air inlet tube and a powder distributing tube. The powder concentration can be modified independently of the velocity of the air stream by adjusting the distance between the mouth of the air inlet tube and the surface of the powder. Two light weight pellets are positioned in the container and are adapted to be agitated by the air stream for preventing crater formation in the powder body. These improvements enable wide controllable variation in the amount of powder sprayed. Invented by Milton H. Hermann and Sollie Hergott, Chicago, Ill. Unassigned. Application December 23, 1940. 9 claims.

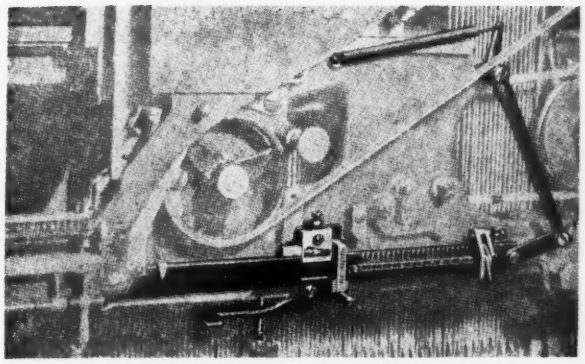
2,303,612. WEB WASHING APPARATUS for a cloth printing machine such as shown in patent 2,080,133 and patent 2,175,051. The gray cloth used as a backing in textile printing is passed through a washing apparatus consisting of a chamber divided into two sections. The cloth passes over a number of rollers arranged at the top and bottom of the first chamber section so that it is immersed several times in water at the bottom of the chamber. It is also subjected to spraying. The second chamber section contains clear rinsing water from which the cloth passes onward through a stretcher roller, to squeegee rollers, to a dryer, and thence moves forward to the printing rollers. This apparatus makes it unnecessary to slow down or interrupt the operation of the machine for the introduction of a clean gray backing cloth. Invented by Lynn B. Case, New Brunswick, N. J. Assigned to John Waldron Corp., New Brunswick, N. J. Application September 20, 1940. 1 claim.

2,303,646. MULTI-COLOR INKING ARRANGEMENT for an intaglio or other undersurface printing plate which provides printing in two or more colors at one and the same operation. Invention is intended for use in printing bank notes and the like wherein vertical, horizontal, or other bands or stripes of distinctive colors are desired to be laid for underlying tints. Process involves the laying of one or more spaced bands of ink of the same or different colors onto the intaglio plates and subsequently superimposing another color or colors of ink to fill all the cuts or depressions not already filled by the first bands of colors. Thereafter the excess ink is wiped off to leave only the undersurface ink which renders a perfectly joining and matching impression in several colors simultaneously. Invented by Myron A. Lathey, Ottawa, Ontario, Canada. Unassigned. Application July 16, 1941. 3 claims.

2,303,821. MIXER FOR SUSPENDING PULVERULENT MATERIAL IN AIR preliminary to dry spraying of the material onto a freshly printed sheet to prevent offset. The material ordinarily used may include any finely divided powder such as talc, French chalk, soapstone, China clay, barium alumina, calcium, magnesium, titanium, silicates, starches, zinc, etc. Bulk material is placed in a bottom container of the mixer where a cone shaped agitator plunger, equipped with a coarse screen

(*Continued on Page 31*)

IMPROVED ASSEMBLER SLIDE, CLAMP & BRAKE



• When you begin to realize that the "shimmying" Assembler Slide Clamp is not normal—when you get rather tired of changing the clamp trigger and springs

• when you want to overcome the "slipping" of the Assembler Slide because of worn brake blocks—order the "STAR" antidote, which consists of two units.

IMPROVED ASSEMBLER SLIDE & CLAMP.....$7.25

IMPROVED ASSEMBLER BRAKE & BRACKET..... 7.75

The first unit may be ordered alone.

The second can be used with it.

Both the slide and clamp are far stronger than the conventional parts. No parts to wear out. The wearing surface of the slide is *hardened*.

Put these two items on your machines and you'll bless us.

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Precision TRADE ★ MARK Parts

POSITIVE TRACTION — NO STRETCH — LONGER WEAR, MEANS ACE BELTS. For All Places on LINOTYPES and INTERTYPES.

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ZINK CUT CEMENT PRICES in the United States: 75c per large tube; $6.00 per dozen tubes; $5.00 per dozen tubes in gross lots.

Does Not Deform Thin-Gauge Zinc

Booth's Zink Cut Cement is particularly valuable for mounting the 18 and 21 gauge zinc cuts on wood or metal base, in addition to the heretofore standard 16 gauge cuts. This cement will not deform the printing surface of the cut because it is spread out to an extremely thin film. In use, it is extremely economical because it is furnished to you in a convenient tube with applicator nozzle.

Fastens any kind of cut to wood or metal base. Send for a trial tube at 75c if you are not now using it. Smart mechanical executives take advantage of all worthwhile production helps—this cement is one of them.

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Keep keyboard cam wheel bearings supplied with sufficient amount of clock oil. Keep excess oil out of the rubber roll shaft bearings. By observing these two maintenance items, the machinist will secure maximum service from rubber rolls. Booth's rolls are made carefully from finest materials—they are concentric from end to end. $1.45 per pair; $7.75 per dozen.

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THE E. A. BOOTH RUBBER COMPANY

364 ROCKEFELLER BUILDING • CLEVELAND, OHIO

The kind of printing that says **"KEEP ON"**

★ Newspaper readers are notoriously hasty. They glance at headlines. They skim columns for the gist of a story—indignant if it takes more than a few seconds.

★ But there are papers so invitingly written and printed that the most impatient reader finds himself perusing line by line to the story's end, until reading—not skimming—becomes a fixed habit.

★ Such papers realize values, cultural and financial, that are the envy of more superficial contemporaries. They are papers with traditions, with tested policies, loyal followings. In a good many instances, Certified Mats are contributing to their reading quality and the clarity of their illustrations.

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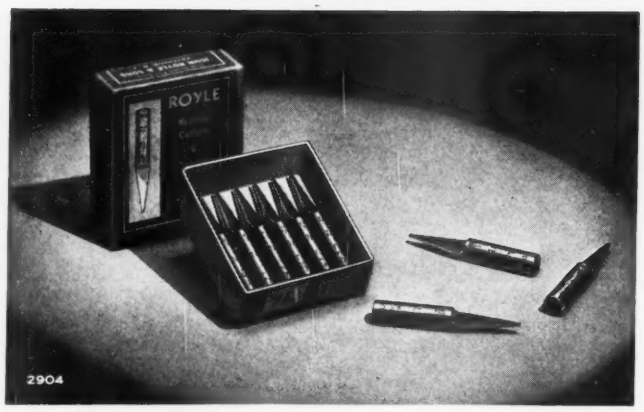

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B		Zinc
C		Brass
D		Electrotypes and copper
E		Copper (Steel at reduced speed)
F		Zinc (Reinforced blade)
G		Brass (Reinforced blade)
H		Copper (Ground below center)
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All Royle Routing Cutters reflect advantages gained through more than eighty years' experience in making these tools. We promise no miracles, but offer a complete line of cutters in every respect the finest that sound design, fine material and expert workmanship can produce. *Order Direct Or Through Your Dealer . . . Be Sure It's a Royle.*

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ANNOUNCEMENT!

In collaboration with two well-known mechanical executives, Eastern Newspaper Supply has developed a process for backing 18-gauge and 21-gauge photo-engraving zinc with an especially processed board to standardize all cuts to the regular 16-gauge thickness.

The processed board is applied to the zinc flat after etching with an instantaneous adhesive hich permits immediate routing and use of the cuts.

This method eliminates change of base heights in the composing room and stereotype department, shallow matrix impression, and the necessity for backing off ink rollers and impression cylinders in the pressroom where 18-gauge line cut layouts are used in the form.

In making this announcement we want to advise the trade that these materials will be available for shipment in the near future. In the meantime, we will send samples upon request and accept orders for delivery of the materials contingent upon their availability at an early date.

EASTERN NEWSPAPER SUPPLY

9603 NORTHERN BLVD. ★ ★ CORONA, L. I., N. Y.

over its mouth, moves up and down. The coarse screen prevents the material from piling up in cone shape and the cone of air moving downwardly disperses a cloud of the material. Air under pressure is directed tangentially into both this bottom container and an upper container, the two containers being separated by a funnel-shaped partition with a central passageway so that only the finer particles in the center of the centrifugal whirl will pass upward to the top container where the outlet is located. Invented by Merle P. Chaplin, South Portland, Maine. Assigned to Chaplin Corp., Portland, Maine. Application August 23, 1939. 4 claims.

2,303,905. APPARATUS FOR DETERMINING THE INTENSITY OF COLOR OF INKS during the printing process so that either additional ink or solvent may be added to restore the ink color intensity and maintain a constant quality of printing controlled within close limits. Rays of light are directed through a transparent chamber in which the colored ink flows. The light so transmitted is passed through a complementary color filter with the result that changes in the intensity of the color of the ink appear as changes in the intensity of the light emanating from the color filter. By comparing the filtered light with light of a standard intensity, it is said that changes in color intensity of the ink may be detected more rapidly than heretofore because the human eye is more sensitive to slight variations in light intensity than to slight variations in color intensity. Invented by Frederick M. Bender, East Orange, N. J. Assigned to Speedry Gravure Corp., New York, N. Y. Original application September 9, 1937. Divided and this application August 2, 1940. 2 claims.

2,304,001. NEW COMPOSITION FOR USE IN MAKING PRINTERS' ROLLS or inking rollers which does not have the defects of glue-glycerine rolls, i.e., it will not melt in hot weather or at high speeds or become water logged in humid weather. The new composition is tough and wear resistant, takes ink well and spreads it well on the type. It is composed of glue in combination with "Ketanol" a polyalkylol ketone, the preparation of which is described in patent 2,303,370. (See this Report under *Miscellaneous*)
Example: Parts by weight. Glue—100; water—40; propylene glycol—72; "Ketanol"—160. Invented by Joseph H. Kugler and William A. Vievering, St. Paul, Minn. Assigned to Minnesota Mining & Mfg. Co., St. Paul, Minn. Application May 6, 1939. 20 claims.

2,305,164. VULCANIZED OIL COMPOSITION for forming the ink-carrying surfaces of printers' rolls, offset printing blankets, etc., having incorporated therein a synthetic rubber-like material such as Duprene or neoprene which reinforces and toughens the vulcanized oil so that it possesses increased tensile strength and elasticity and will not become split or torn during service. A preferred composition for the oil consists of 25% (by weight) of Type E-neoprene, 0.25% zinc oxide, 2.5% magnesium oxide, 32.51% corn oil, 32.51% soya bean oil, and 7.23% of a previously heated mixture of 3.2 pounds of magnesium oxide and 100 pounds linseed oil. The oil may be vulcanized by adding 4 c.c. sulphur chloride per ounce of the mixture. Invented by Bruce W. Hubbard, Oak Park, Ill. Assigned to Ideal Roller & Mfg. Co., Chicago, Ill. Application March 25, 1938. 4 claims.

2,305,851. CYLINDER STOP BLOCK which securely maintains the impression cylinder of a vertical type press against any possible movement during its period of non-rotation immediately after its period of drive has been rendered ineffective. Solid stop blocks, heretofore used, moved abruptly into cooperative locking relation with the impression cylinder thus causing objectionable noise and wear of the locking faces of the solid blocks. Present invention utilizes a slidable latch that is activated by a coil pressure spring which forces the latch into locking position on one side of the shaft's cam when the other side of the shaft's cam reaches and is stopped by a projecting leaf spring. Invented by Edward F. Dudley, Oak Park, Ill. Assigned to The Miehle Printing Press & Mfg. Co., Chicago, Ill. Application December 16, 1940. 7 claims.

2,306,044. SMALL OFFSET PRINTING PRESS designed to be used in general business offices by unskilled help yet said to fill the requirements in printing plants for a machine for light fast work. The present invention is a general reorganizing of the known construction of this type of lithographic machine but is also convertible for use of raised image printing means. The reorganization does not confine itself to one phase of the apparatus but goes into several aspects of its operation. Invented by William Ward Davidson, Evanston, Ill. Unassigned. Application May 5, 1939. 19 claims.

For Patent Research in the U. S. Patent Office, or a prompt estimate on any type of search, address INVENTION, INC., Munsey Bldg., Washington, D. C.

"Let Us Take Heed"

RECENT articles in trade journals have pointed out the present-day need for the obviously intelligent use of the mails to supplement the personal contacts that most of us are forced to curtail to some extent for reasons of diminishing personnel or transportation facilities. But there is another equally if not more important reason that may be overlooked—and that is the truly tremendous shifts in business personnel that are taking place these days.

The McGraw-Hill circulation department recently examined the personnel changes of those in responsible positions in approximately 5000 industrial concerns. Here is what they found:

Presidents	11 %
Vice Presidents	19 %
General Managers	14.5%
Sales Managers	23.5%
Production Managers and Superintendents	29.5%

Way back in Bible times Joseph found to his cost that "Now there arose up a new king over Egypt, which knew not Joseph."

Let us take heed.

—*Photo-engravers' Bulletin*

LETTERS
TO THE EDITOR

Newsprint Ink Consumption

DEAR EDITOR—I am a consistent reader of *Printing Equipment Engineer* and am certainly astounded to read that Pressroom Superintendent Joseph Addison of the Hartford (Conn.) *Times*, uses "about 2½ lbs. of ink for 5000 8-page papers."

I have kept accurate figures on mileage of various news inks and the best I have been able to get is 4280 pages r.o.p. These 4280 pages divided by 8 is 535 8-page papers. The compositor must have been careless with his ciphers.

Frank A. White, Pressroom Foreman,
The Augusta (Ga.) *Chronicle*.

Editor's Note—The statement referred to in Mr. White's letter appeared in New England Mechanical Conference Report, Pressroom Clinic, November issue. Obviously, the typographical error brought Mr. White's letter. After referring it to Mr. Addison, we received the following reply:

"During a discussion at the Pressroom Clinic, the writer remarked that it would be well if all pressroom executives were to keep records of ink coverage, or mileage. I quoted from the old bucket and coal-hod filling days, when the records showed as high as 2.50 lbs. and 2.70 lbs. of ink per 1000 8-page papers. In checking our figures here at the *Times*, I find that we average 1.76 lb. Our paper carries a 22 in. column length.

Joseph W. Addison, Pressroom Supt.,
The Hartford (Conn.) *Times*.

TECHNICAL LITERATURE

Production and Mechanical Executives wishing to secure copies of the literature described below may do so by addressing the manufacturer direct, or by sending request to Printing Equipment Engineer. ***We'll be glad to pass your request on to the manufacture. Literature is gratis except where noted.***

Good Forms Get Work Done

A rather thorough treatise on office forms entitled *Good Forms Get Work Done*, has been published by Hawthorne Paper Co., Kalamazoo, Mich. Size of the booklet is 8⅞ in. by 11⅞ in., wire bound. Printing executives who are worrying about replacing the volume of printing that has passed out for the duration will find many practical suggestions for securing printing orders in this booklet. Contained in the text are discussions on how to analyze forms, need for new forms and requests for them, "before" and "after" exhibits of actual forms, hints leading to better design, cutting costs by watching specifications, basic sizes for flat forms, standard form sizes, how to order punched forms, ganging up to help out budget, multiple copies, how to buy forms economically, how to order and stock forms, and many other informative suggestions. The booklet is well illustrated, examples of forms are presented in suitable sizes, as are paper stock specimens in white and color.

Graphite Lubrication Handbook

In 4⅞ in. by 7½ in. size, consisting of 28 pages and cover, Nassau Laboratories has issued a booklet entitled *Graphite Lubrication Handbook*. This booklet should be of great interest to printing plant executives and maintenance men who have responsibility in keeping production equipment in first class operating condition. Natural colloidal graphite (as distinguished from the electric furnace product) is discussed from the standpoint of lubrication of machinery. Carried in lubricating oils, greases and other vehicles, the graphite makes its way to the metallic surfaces of bearings, and produces on those bearings a graphoided skin which is proof against wear and erosion. This occurs because of the high affinity which natural colloidal graphite has for metals. Heat and rubbing action cause the microscopic graphite particles to combine with the molecular surface of the metal, creating a durable and practically frictionless surface. Among many other applications, those particularly adaptable to printing equipment are listed.

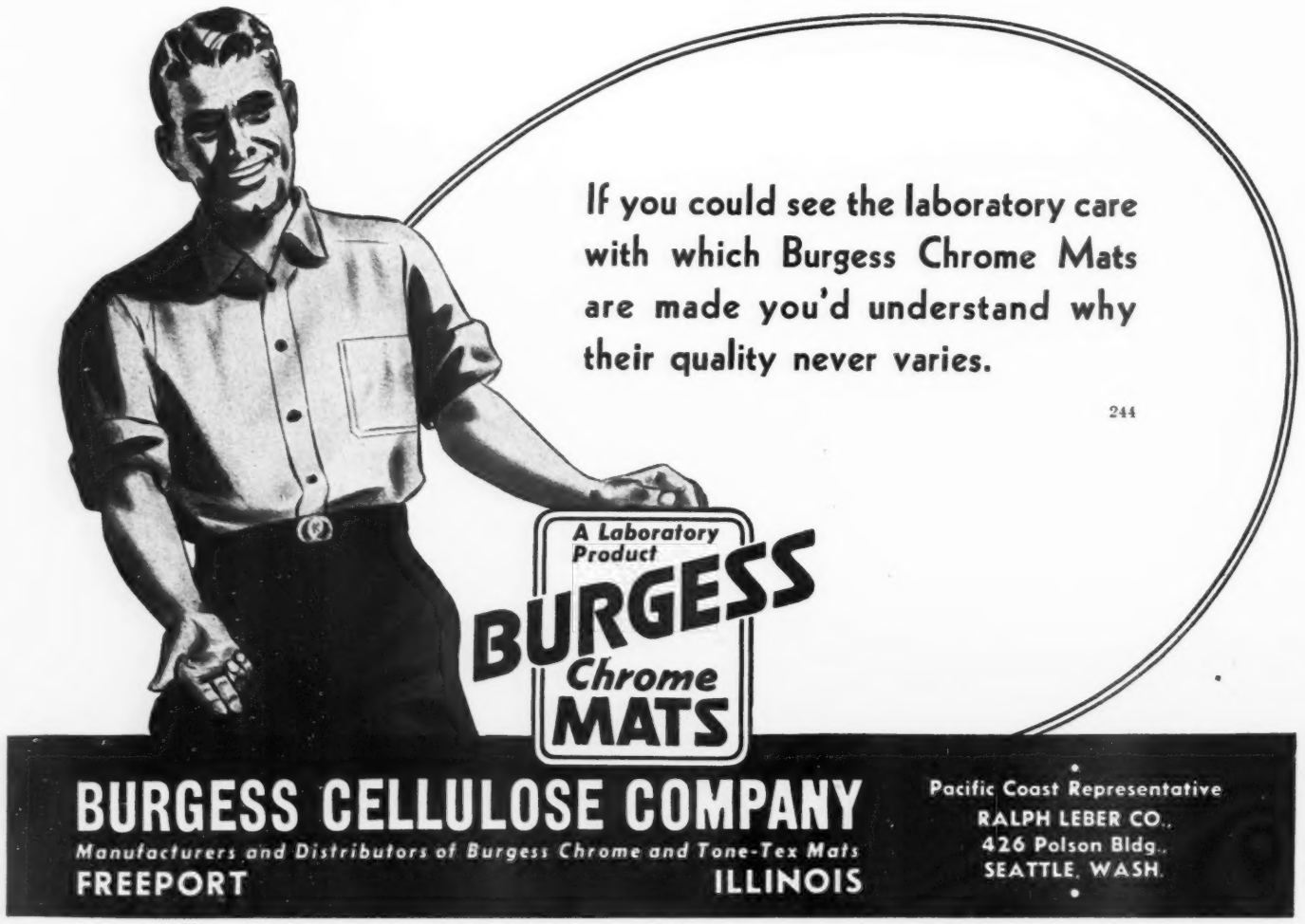
Copies of the booklet may be obtained from Nassau Laboratories, Inc., Hackensack, New Jersey.

On the Linotype Front

"On the Linotype Front" is the title of an illustrated booklet designed to familiarize all members of the Linotype organization with the many war-work activities being carried on at Linotype headquarters—without, of course, revealing any secret details. As President J. T. Mackey states in a foreword, "Everyone associated with the company knows in general terms what we are doing. But most of us necessarily concentrate so closely on our own particular jobs that we may not have a very clear idea of what the company is accomplishing through our combined activities and of the importance of that work to winning the war." The booklet is a story of team work—both within the Linotype organization and between that organization and the Ordnance Department of the United States Army. But it is also a story of team work between the Linotype organization and the press of the United Nations.

Carload Stowage Folder Available

The 8 page *Gerrard Red Book of Carload Stowage* (illustrated) is available to anyone wishing a copy. The Gerrard method of loading freight cars is treated pictorially in group illustrations. Of particular interest to the printing industry is the Gerrard UniLastic method of stowing paper in rolls and skids; the system for stowing crates and cases and barrels and drums. Gerrard's round steel strapping machine (G model) is illustrated and method of securing goods to be shipped is described.


If you could see the laboratory care with which Burgess Chrome Mats are made you'd understand why their quality never varies.
244
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★ ROUTERS

BUY BONDS for VICTORY

Printing on the home front and fighting front continues to build men's minds and maintain their morale, as it has throughout our entire history. Today's need for greater production of armament, supersedes our peace time endeavors of making modern cost saving machinery for printers and publishers. When the war has been won Hammond will again be serving you with even finer equipment.

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KALAMAZOO • MICHIGAN
EASTERN BRANCH 71 W. 23rd STREET, NEW YORK CITY

Wpb News

(Continued from Page 12)

for any war or essential civilian purpose, but is usable for printing, publishing and decorative purposes. The restriction on the manufacture of additional bronze powder for decorative or other non-essential purposes is continued in effect in the Supplementary Conservation Order M-9-c-3 as Amended December 28, 1942.

Professional Photographers and Publications To Have First Call

BY Order L-233, production of film for snapshot fans and moving picture amateurs on December 16 was cut 50% below 1941 output by WPB. At the same time production of film for professional use was cut 24% below 1941 output and manufacture of 35 mm. motion picture film was ordered reduced by the same percentage.

The cut in film production for professional purposes will affect professional photographers, newspapers, magazines, and similar groups engaged in professional photography. However, WPB officials stated that film manufacturers have given assurances that the most essential groups in this category will have first call on what film is produced. It is not the intent of the order to force a curtailment in necessary photographic activities, these officials declared.

The order prohibits the use of a preference rating under the terms of P-100 in any form for acquisition of film or film base by anyone. When priority assistance is needed, it must be applied for to the War Production Board and will be granted for civilian purposes only in very special cases.

Biggest Printing Job of Its Kind

MECHANICAL and production executives generally know quite a bit about large scale production even though they don't happen to be supervising plants doing that kind of work. These executives will be highly interested in what is thought by the Government Printing Office to be the biggest job of printing of its kind in the country's history, if not of the world. The job referred to is the production of War Ration Book 2 which OPA is distributing this month, and which introduces to all of us the point rationing system for certain commodities which all of us consume.

After the books were printed they had to be distributed to every nook and cranny of this vast land. These immense printing and distribution requirements are in themselves an important reason why rationing programs cannot be put into effect overnight.

Before the books could be printed at all, 96 carloads of special safety paper had to be ordered, manufactured and shipped to the plants which did the job. This safety paper will prove a real headache to anyone foolish enough to try to counterfeit ration books. The paper used in the books can be quickly identified by any one of a number of simple secret tests that even an unskilled person can apply, if he knows the technique.

Arranging for the actual printing of the books was an even greater task than getting the special paper. There are 192 ration stamps in each book. Multiply that by 150 million books and you get almost 30 billion stamps—a figure which happens to exceed twelve years continuous production of all the postage stamps used in the United States.

A job like that could not possibly have been handled on government presses within the 60 days allowed for printing and distribution of War Ration Book Two. So the Government Printing Office scoured the Nation to find printers who could handle the job on a rush basis. It found that only 18 printers could show the capacity and were willing to produce the books in volume and even then some had to get special equipment, for the books had to be printed on a press that printed, perforated and numbered them in a continuous operation. The first books came off the press back in November. The completed books rolled off the presses in plants in some cities at a rate as fast as 500,000 a day.

The cities which share in the job are: Waltham, Mass.; Niagara Falls, Tuckahoe and New Rochelle, N. Y.; Hoboken,

N. J.; Scranton, Pittsburgh and Franklin, Penna.; Baltimore; Dayton, Norwalk and Shelby, Ohio; Chicago (two plants); Houston, Tex.; Minneapolis; Oakland and Los Angeles, Calif.

As the completed books roll off the presses, they are bundled and started on their trip to the 5500 War Price and Rationing Boards throughout the country. Altogether, shipping the books will take up the equivalent of four freight trains of 30 cars each. Distribution should be completed during January.

Does Not Apply to Spare Parts for New Equipment

THE exemption of general industrial equipment for certain repair and maintenance purposes from the control over distribution does not apply to spare parts for new equipment, it was made clear on December 14 by Interpretation No. 2 of Order L-123.

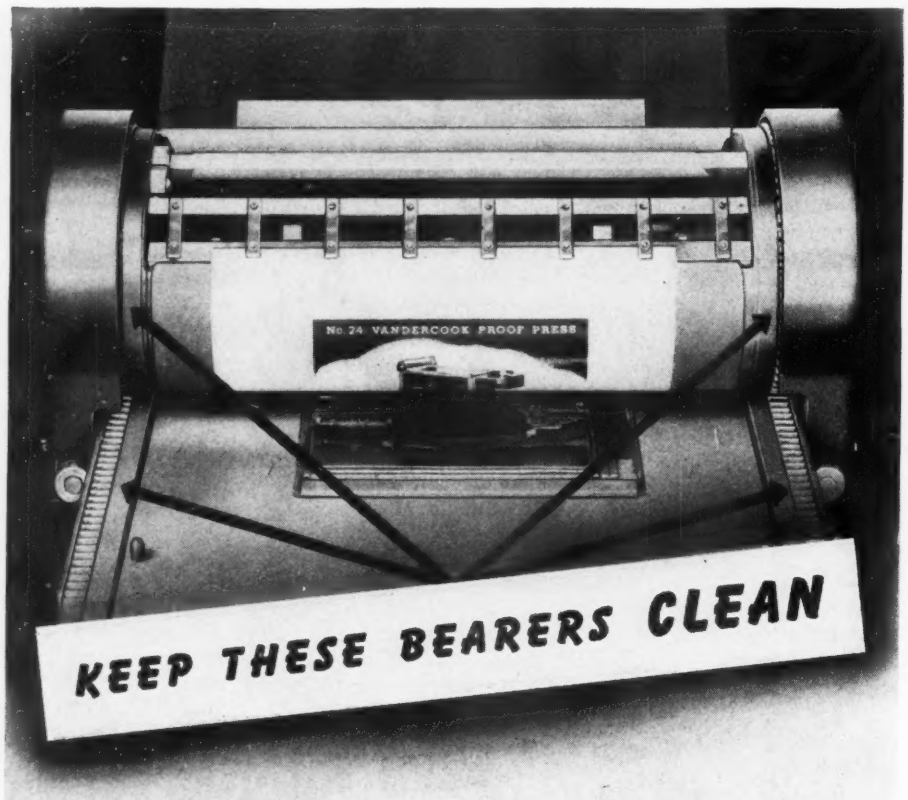
The interpretation explains that equipment is considered "new" when it has not been delivered to a person acquiring it for use.

The interpretation also points out that the exemption is intended to provide for the repair and maintenance of any existing equipment which has been delivered for use, including equipment delivered prior to the issuance of the order.

Paragraph (a) (2) defines "general industrial equipment" to mean new equipment of the kinds listed, from time to time, in List A to the order. Such equipment is deemed to be new when it has not been delivered to any person acquiring it for use. Paragraph (b) imposes restrictions on the acceptance of orders for, and commencement of production and deliveries of, general industrial equipment.

Paragraph (c) provides an exemption from the restrictions of paragraph (b) for any order or delivery of maintenance and repair parts in an amount not exceeding $1,000 for any single piece of general industrial equipment to be repaired or maintained; or in any amount for the repair of general industrial equipment when there is an actual breakdown or suspension of operations of such piece of equipment. The exemption provided in paragraph (c) is intended for such repair or maintenance parts to be used to repair or maintain any existing equipment, i. e., equipment which has been delivered for use to a user and requires repair or maintenance. The exemption is not intended to apply to spare parts for new equipment nor is it limited to the repair or maintenance of equipment delivered after the date of the order.

List A attached to and part of Limitation Order L-123 as Amended November 24, 1942, includes the following items: Conveying machinery, mechanical power transmission equipment, industrial fans and blowers, turbo-blowers (except turbo-blowers covered by provisions of Lim. Order L-163), industrial compressors and vacuum pumps, industrial pumps, industrial hand trucks, stationary steam engines, air washers, heat exchangers, industrial dust collectors, passenger or freight elevators, portable (platform type) elevators and steel platforms, 1 h.p. and over electric motors, motor generator sets (¾ k.w., or 1 h.p. and above), electric controllers rated 1 h.p. and over, safety switches and knife switches, rated 60 amo. and higher, 600 v. and below; circuit breakers, lifting magnets (circular type) and controllers, dynamometers and rotary converters.



The accuracy of your proof press depends to a large extent on the condition of the bed and cylinder bearers. When dirt is allowed to accumulate on the bearers, it is ground into the metal, causing premature wear. If the dirt cannot be wiped off, use a brass rule as a scraper.

Cleanliness Cuts Costs

VANDERCOOK
PROOF PRESSES - BLOCK LEVELLERS - HACKER GAUGES

VANDERCOOK & SONS, Main Office and Plant, 900 N. Kilpatrick Ave., Chicago, Ill.
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Procedure for Ordering Stitching Wire

THE United Typothetae of America, in a recent bulletin to its members, discusses conservation measures with respect to the use of stitching wire and bookbinders' wire on a voluntary basis. In the discussion are incorporated suggestions for ordering stitching wire. These are as follows:

"When you are unable to obtain stitching wire through your regular source of supply, send a PD-1A form to your Washington office for a Priority Rating—but first try to obtain the wire through your usual source of supply.

"When sending in a PD-1A for stitching wire, it must be accompanied by a letter containing the following information:

"(1) Wire usage (in pounds) during 1941 by gauge.

"(2) Wire usage (in pounds) during 1942 by gauge.

"(3) Current inventory.

"(4) Breakdown end-use, as, for example, magazines, booklets, pamphlets, etc.

"(5) Indicate conservation measures taken. (This is important to WPB.)

"In furnishing the above information, please indicate gauges of wire and whether flat or round."

Metal for Fluorescent Light Reflectors Banned

SUBSTITUTION of non-metallic materials in the manufacture of reflectors for fluorescent lighting fixtures as a means for conserving steel, is required throughout the industry. Restrictions applied to reflectors are incorporated with those previously established in respect to types and number of fixtures, in a single amended order, Limitation Order L-78, issued by the Director General for Operations. The order became effective October 31.

The combined tonnage of steel diverted to production of essential war goods by the original order and its amendments, including the saving to be realized by substitution of non-metallic reflectors, has been estimated at 50,000 tons annually.

"We don't have to wait this long for a WOOD MAT *to dry."*

WOOD DRY MATS

WOOD FLONG CORPORATION
HOOSICK FALLS, NEW YORK
551 Fifth Avenue New York City

If you've never tried it

SEND FOR SAMPLE

"FLECTO" Gummed Backing Felt

Porosity permits quick escape of steam—glue coat prevents slipping or leaving matrix under heat. Adhesive does not crack, peel, or crystallize. Gauges .021, .025, .030, and .035 in sheets 18"x 24" also gauges .040, .045, .050, and .060 in sheets 18"x 22"—no charge for strip cutting.

"TRUE-MOLD" CORK MOLDING BLANKETS

Sets match in weight and density, give better molding. Uniform density throughout gives "TRUE-MOLDING" over entire form surface. We furnish hard and extra-hard (special) blankets.

EASTERN NEWSPAPER SUPPLY
9603 Northern Boulevard Corona, New York

Diversion to war use of fixtures and parts now frozen in the stock rooms of manufacturers under the "blocked inventory" regulation already in effect is also required by the amendment. The WPB Branch has determined that the metals conserved by this step will provide an additional 2000 tons of steel and 175 tons of copper that can be earmarked for war installations.

The order as amended authorizes release of small inventories in the hands of retailers upon application to WPB and approval by the Director General of Operations. Form 556, which can be obtained at any WPB field office, must be submitted by the retailer.

Water Heater Manufacture Restricted

ON December 21, the War Production Board added gas fired and oil burning water heaters to the list of products which will be manufactured this year only for use in war housing or other war projects.

Production of metal tank jackets and metal tank supports is suspended and the installation of metal tank jackets is prohibited with certain minor exceptions.

Civilian needs for replacements of gas fired water heaters in 1943 and thereafter must come out of existing stocks. Necessary replacements may still be made for some time in the future, however, since inventories of finished equipment are comparatively large at present.

Two new limitation orders were issued. L-185 deals with gas fired and oil fired water heaters, while L-199 prohibits manufacture and installation of metal tank supports and provides a simplification schedule to govern the manufacture of black iron and galvanized iron range boilers and expansion tanks. Since these orders principally concern manufacturers of this equipment, we will not quote a summary here.

Lim. Order L-73 Amended Affects Pencil Sharpeners and File Fasteners

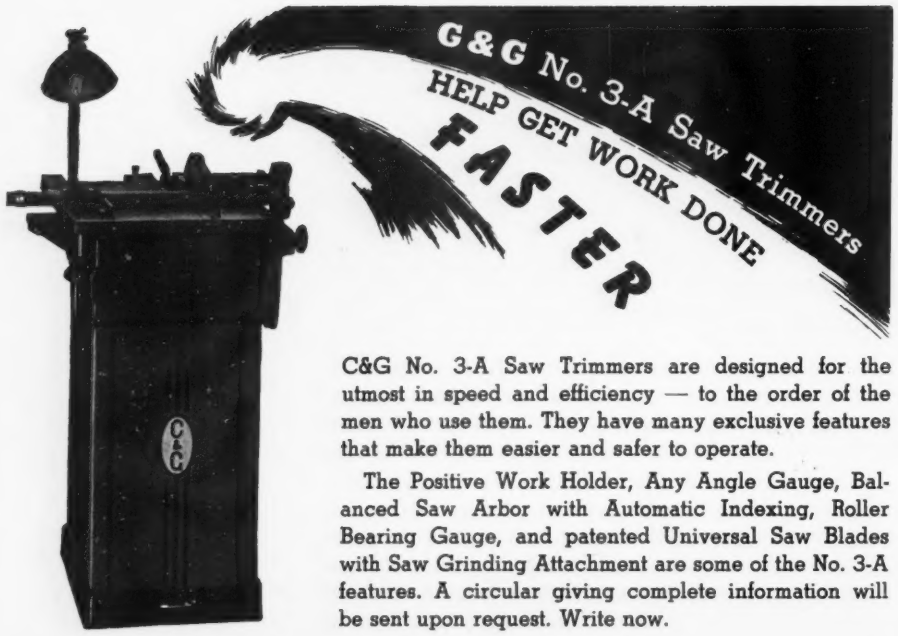
PRODUCTION of certain office supplies—including desk pencil sharpeners and metallic file fasteners—has been ordered stopped by General Limitation Order No. L-73 as amended. Production of metal repair parts for office supplies also is prohibited, with the exception of parts for staplers and perforators (punches). Further limitations on the manufacture of complete staplers and perforators are contained in the amended order. Only assembly of already fabricated metal desk pencil sharpener parts is permitted, and that must stop January 15. Complete production of metallic file fasteners is ordered stopped by January 1, and manufacturers are no longer permitted to secure metal materials for their production. After December 31, only staplers using 8 oz. or less of metal per unit can be produced, and the same metal limit applies to two-hole perforators. Three-hole perforators may include as much as 12 oz. of metal per unit. A saving of about 2300 tons of steel annually is expected to be effected through this amendment by reducing consumption of critical materials to 7400 tons annually.

Amended Copper Order Affects Copperplate Engraving, Photoengravers, Electrotypers and Rotogravure Printers

ON December 26, WPB issued Copper Conservation Order M9c as Amended. Downward consumption of copper by the Graphic Arts Industry is indicated by the order. The use of copper for engraving plates for copper-engraved business stationery, greeting cards and calling cards is prohibited after December 31, 1942. An additional restriction on the use of copper by the printing and publishing industry is the limitation to 60% of a base period, in place of 70% as formerly, on the amounts of metal used for purposes other than those controlled by Copper Order M9c-3. The latter order, M9c-3, covers bronze powders, inks, etc. Also, the industry is ordered to use some scrap instead of new copper in the electrotyping process and rotogravure platemaking.

Classification of Printed Matter Bound with Wire Stitches

THE Printing and Publishing Division of WPB announced on December 23 that the Division had been advised by industry members that some postoffices have refused the third class book rate on matter using less than two wire



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stitches. The Division then communicated with the U. S. Third Asst. Postmaster General's Office. The Office cooperated by modifying postal regulations governing this specific rate by issuing the following instructions:

"With reference to the requirement that books, catalogs, and similar printed matter of the third class, in order to be acceptable at the postage rate of 1 cent for each 2 ounces or fraction thereof, or at the rate of 8 cents a pound under the provisions of section 562, Postal Laws and Regulations, shall, when bound by means of metal stitches, have not less than two such stitches, postmasters are informed that in view of existing conditions necessitating the conservation of metal such matter securely bound in book form with only one wire stitch may be accepted for mailing at the same rates of postage. This modification is also applicable when a single wire stitch is used to fasten an insert to a book or catalog in order to make it an integral part thereof.

"The foregoing does not contemplate any modification of the requirements with respect to the fastening of pages of books and catalogs by means of stitching with thread or string, or by pasting."

New Chief for Book Section

HARRY F. WEST, formerly connected with the J. B. Lippincott Company, book publishers with headquarters in Philadelphia, has been appointed Chief of the Book Publishing and Manufacturing Section of the Printing and Publishing Division, succeeding Leonard G. Winans, it was announced today by E. W. Palmer, deputy director. Mr. Winans is resigning to accept a commission in the Navy. Meirick Dutton, who has had charge of the Publishing Unit of the Book Section for several months, continues in that capacity.

Voluntary Stitching Wire Conservation

IN a letter addressed to the printing industry in general under date of December 23, the Printing and Publishing Division of WPB suggests ways and means for conserving stitching wire. The Division calls attention to the fact

(*Continued on Page 40*)

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that it is within the authority of the Division to draft a Limitation Order governing the use of stitching wire within the Graphic Arts Industry. However, because of the complexity of uses of stitching and bookbinders' wire in the industry, an Overall Conservation Order governing all wire employed in all types of stitching for all printed products, would create certain inequalities. Before considering issuance of such an order, the Division solicits voluntary cooperation of the industry for a conservation program based on practical application for the various segments.

Suggestions for voluntary conservation of stitching wire are offered by the Division, as follows:

(1) In a binding operation, decide whether a job requires wire stitches. If so, minimize the number of stitches. Also determine whether length of clinch of the stitch can be reduced. Perhaps sewing or pasting can be substituted. (2) Consider the use of thinner wire gauges. Where round wire is used, the substituting of 26 gauge for 25 will increase mileage 25% per lb. of wire, and replacing 25 gauge with 27 will increase mileage approx. 40%. (3) For Side Stitching, the Division suggests: (a) Stitching through bulk up to and including ⅜ in. and including but not exceeding 12 in. of binding edge, use *one* stitch. (b) Stitching through bulk exceeding ⅜ in., use no more than *two* stitches. However, if the binding edge is not greater than 5 in. or 6 in., use only *one* stitch, and if the binding edge is not greater than 8 in. and also uses an adhesive, use only *one* stitch.

(4) On Saddle Stitching, the Division suggests: (a) Up to and including binding edge of 11 in., use *one* stitch. (b) If the binding edge exceeds 11 in. and is less than 48 pages, use only *one* stitch. (c) If the binding edge exceeds 11 in. and contains more than 48 pages, use no more than *two* stitches.

The Printing and Publishing Division advises that many magazines and periodicals whose combined circulations run into the tens of millions are reducing the number of stitches previously used. One printer of magazines in the South is turning out over 18 million copies per month, and is now using one stitch instead of the two or three used previously. Commercial printers are reducing the number of wire stitches. Trade binderies, on their own initiative, are suggesting the use of less stitches to their customers.

The Division commends the voluntary cooperation plan of the Binders Group of the New York Employing Printers Association. Briefly, the plan adopted by this Group is as follows: (1) No book, regardless of size, to have more than two wire stitches. (2) Saddle-wired booklets of 36 or less pages, trim size 9x12 or smaller, to have one wire stitch. (3) Saddle-wired booklets of 68 or less pages, trim size 7½x10½ or smaller, to have one wire stitch. (4) All side-wire glued cover books, size 9x12 or smaller, regardless of number of pages, to have one stitch. By utilizing this plan, the Binders Group states the available supply of stitching wire will last twice as long.

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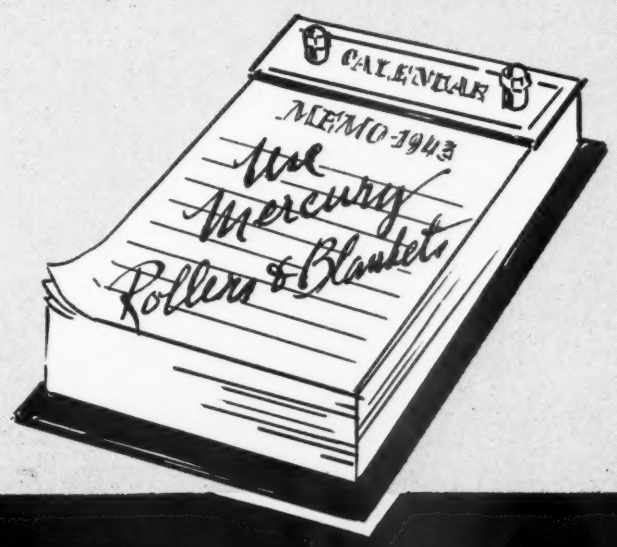
1943

ANOTHER YEAR FOR MERCURY PROGRESS

THROUGH the coming year, one beacon will continue to burn steadily with a clear, strong glow . . . guiding our boys to Victory.

This guiding gleam is faith. Faith in the American institutions for which they are fighting. Faith that the folks back home are doing their part.

Rapid Roller company is keeping, and will continue to keep this faith . . . By aiding the printing industry in its task of maintaining morale . . . in continuing to supply our various products to the Graphic Arts Industry . . . And by working ever-harder to produce more and more of the vital war materials we are now producing.



D. M. Rapport
President

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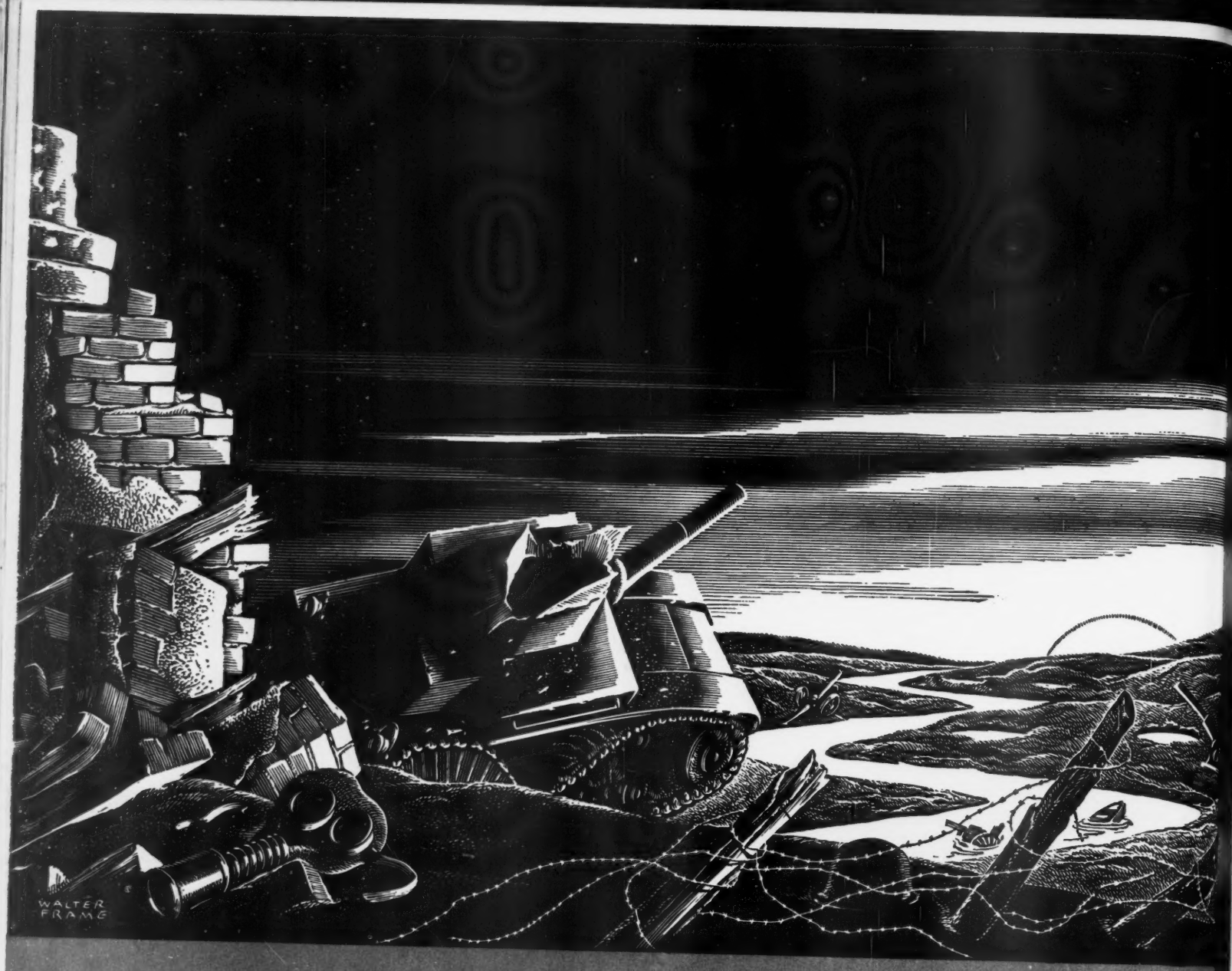
Federal at 26th
Chicago, Illinois



At the Gate of the Year

★ Over the horizon of a war-torn world a new year casts its first faint rays...augury of a coming day to heal and build anew. Earnest eyes peer ahead, eagerly seeking the path which will lead all men to the better life.

★ But no one man is able to see clearly enough or far enough to see wisely for all. The eyes and minds of many must help. For the many must agree on the wisdom of the way—else confusion and strife result anew.

★ There are sign posts which have guided before, and can guide all now. Sign posts which in brief moments of recent time have already led some men farther along the path to the better life than in all ages before.

★ These are *Education*, free to all, and free from all bias...truthful *News*, unimpeded... and *Opinion*, unrestrained and without regulation. Only with these guides can minds find the way. Complete freedom of the press marks the start of the path that leads to all the freedoms and to the better life.

This is the seventh of a series of messages on the Freedom of the Press by INTERTYPE CORPORATION, Brooklyn. Set in Futura